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SERVICE MANUAL

19″ LCD TV/DVD

LD195EM8

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

The LCD panel is manufactured to provide many years of useful life. Occasionally a few non active pixels may appear as a tiny spec of color. This is not to be considered a defect in the LCD screen.

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Dolby and the double-D symbol are trademarks of Dolby Laboratories.

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SPECIFICATIONS

< LCD TV Section >

< TUNER / NTSC >

ANT. Input ---------- 75 Ω Unbal., F type

Description	Condition	Unit	Nominal	Limit
1. AFT Pull-In Range	---	MHz	±2.3	±2.1
2. Syncronizing Sens.	TV.ch.4 CA.ch.31 CA.ch.87	dBμ dBμ dBμ	18 18 18	21 21 23

< TUNER / ATSC >

Description	Condition	Unit	Nominal	Limit
1. Received Freq. Range (-28dBm)	---	kHz	---	±100
2. ATSC Dynamic Range (min / max)	ch.4 ch.10 ch.41	dBm dBm dBm	--- --- ---	-76/0 -76/0 -74/+4

< LCD PANEL >

Description	Condition	Unit	Nominal	Limit
1. Native Pixel Resolusion	Horizontal Vertical	pixels pixels	1440 900	--- ---
2. Brightness (w / filter)	---	cd/m^2	250	200
3. Viewing Angle	Horizontal Vertical	° °	--- ---	-75 to 75 -70 to 70

< VIDEO >

Description	Condition	Unit	Nominal	Limit
1. Over Scan	Horizontal Vertical	% %	6 6	6±5 6±5
2. Color Temperature	--- x y	°K	11000 0.279 0.272	--- ±10% ±10%
3. Resolution (composite video)	Horizontal Vertical	line line	400 350	380 330

< AUDIO >

All items are measured across 8 Ω load at speaker output terminal with L.P.F. / Video1 Input.

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power	10% THD: Lch/Rch	W	1.0/1.0	0.8/0.8
2. Audio Distortion	500mW: Lch/Rch	%	1.5/1.5	3.0/3.0
3. Audio Freq. Response (NTSC)	–6dB: Lch –6dB: Rch	Hz Hz	70 to 10 k 70 to 10 k	100 to 8 k 100 to 8 k

<DVD Section>

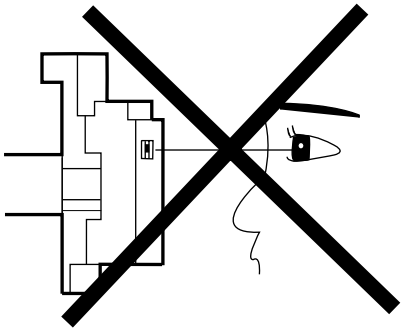
< DVD >

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution (TDV-540 TIT.2 CHP.16)	---	Line	350	330
2. Video S/N (TDV-540 TIT.2 CHP.6)	---	dB	60	55
3. Audio Distortion (LPCM 48 kHz, W/LPF) (PTD 1-NOR TIT.1 CHP.1)	L R	%	0.03	0.07
4. Audio freq. response (LPCM 48 kHz) (PTD 1-NOR TIT.1 CHP.5 -- 10)	L, 20 Hz R, 20 Hz L, 20 kHz R, 20 kHz	dB	0	+4/-5
5. Audio S/N (LPCM 48 kHz, W/LPF, A-WTD) (PTD 1-NOR TIT.1 CHP.1 -- 2)	L R	dB	85	75

Note: Nominal specifications represent the design specifications. All units should be able to approximate these. Some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable. In no case should a unit fail to meet limit specifications.

LASER BEAM SAFETY PRECAUTIONS

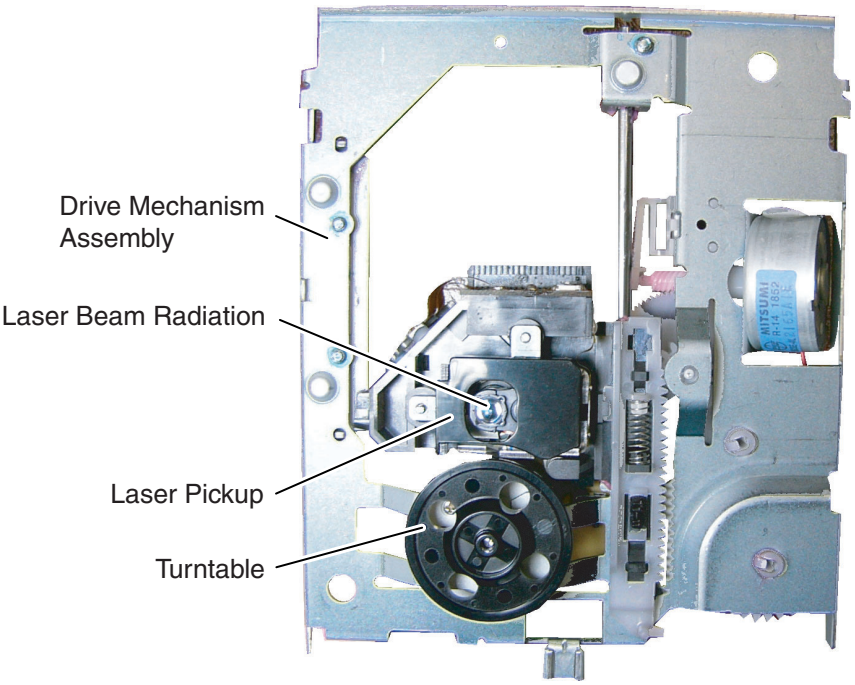
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION
LASER RADIATION
WHEN OPEN. DO NOT
STARE INTO BEAM.

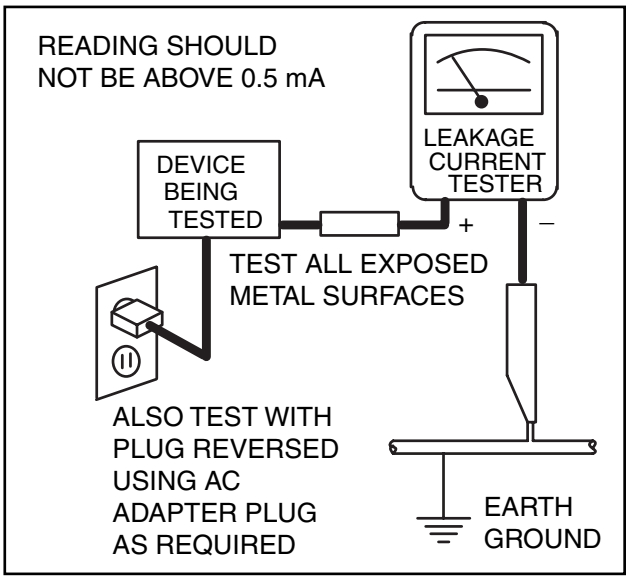
Location: Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Safety Precautions for LCD TV Circuit

1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:
   - **a.** Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**
   - **b.** Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the Liquid Crystal Panel and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.
   - **c. Antenna Cold Check -** With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.
   - **d. Leakage Current Hot Check -** With the instrument completely reassembled, plug the AC line cord directly into a 120 V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the Liquid Crystal Panel.

3. **Design Alteration Warning -** Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.
4. **Hot Chassis Warning -**
   a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0 V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.
   b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.
   c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.
5. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and, e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.
6. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.
7. **Product Safety Notice -** Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The product's safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm they comply with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety.
Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1) Insulation Tape
2) PVC tubing
3) Spacers
4) Insulators for transistors.

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)

G. Check that replaced wires do not contact sharp edged or pointed parts.

H. When a power cord has been replaced, check that 5~6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC supply outlet.

L. When installing parts or assembling the cabinet parts, be sure to use the proper screws and tighten certainly.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d), (d')
110 to 130 V	U.S.A. or Canada	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

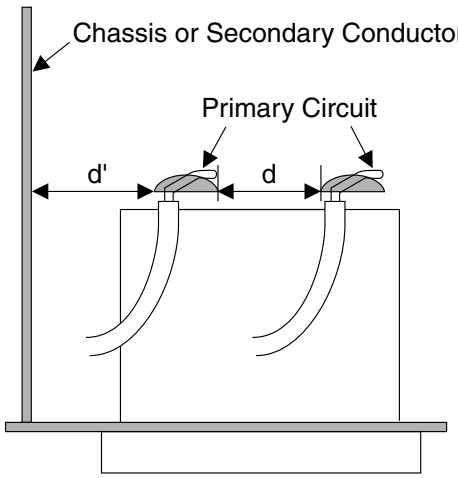


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method: (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig. 2 and following table.

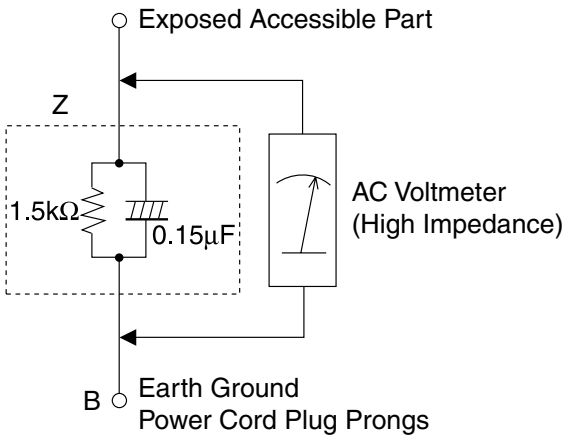


Fig. 2

Table 2: Leakage current ratings for selected areas

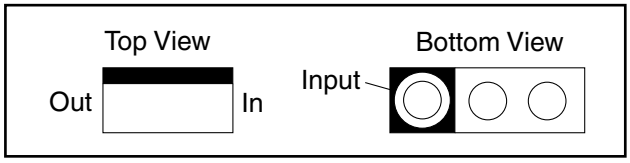
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA rms	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

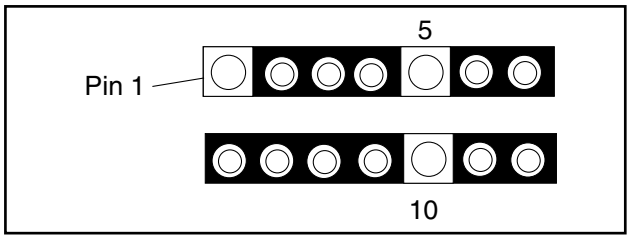
STANDARD NOTES FOR SERVICING

Circuit Board Indications

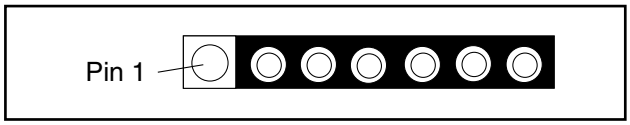
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

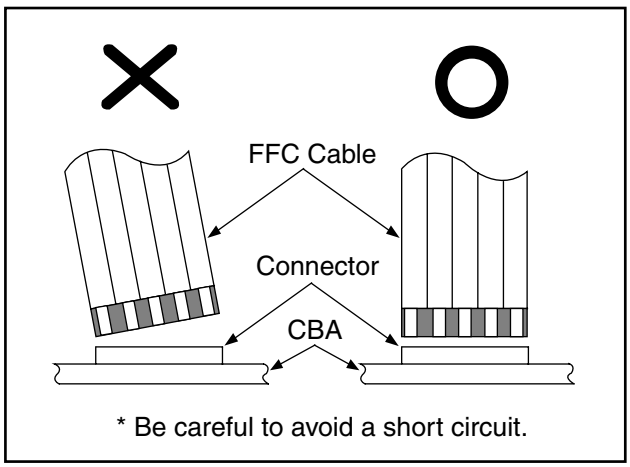


3. The 1st pin of every male connector is indicated as shown.



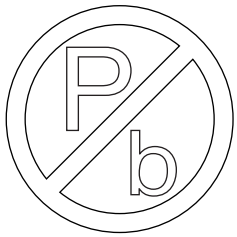
Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

Pb free mark will be found on PCBs which use Pb free solder. (Refer to figure.) For PCBs with Pb free mark, be sure to use Pb free solder. For PCBs without Pb free mark, use standard solder.



Pb free mark

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

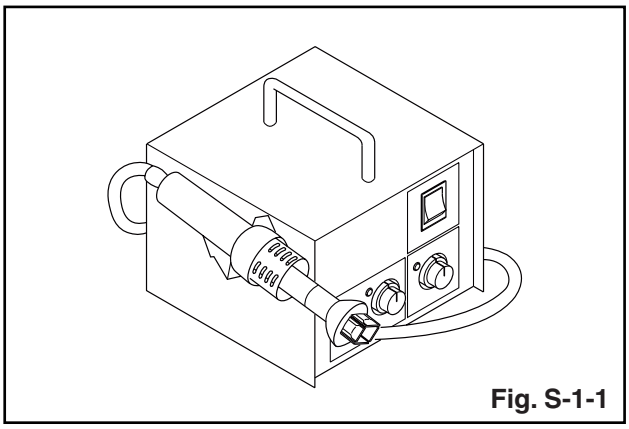


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape

around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

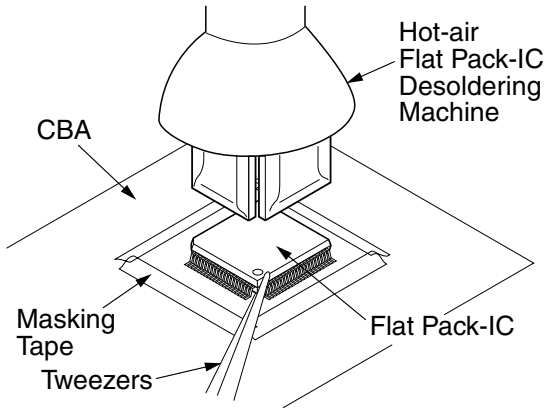


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

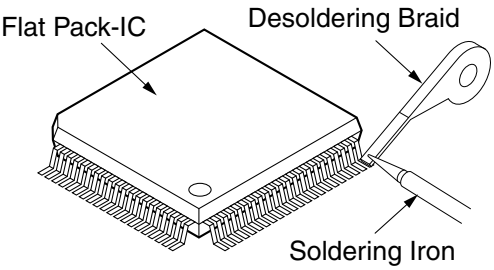


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

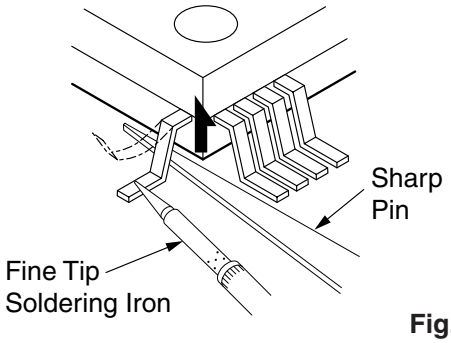


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

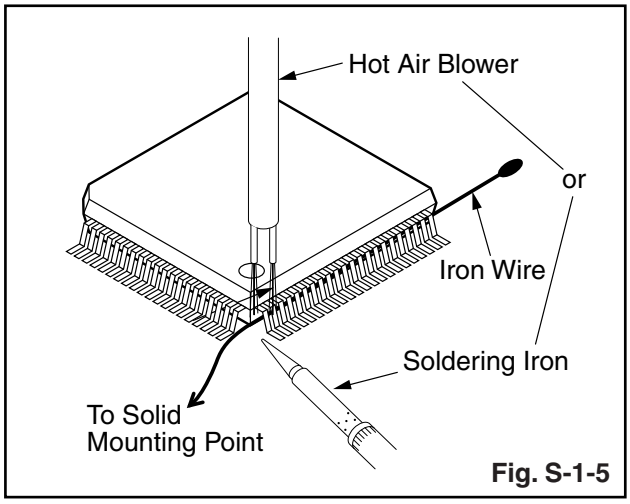


Fig. S-1-5

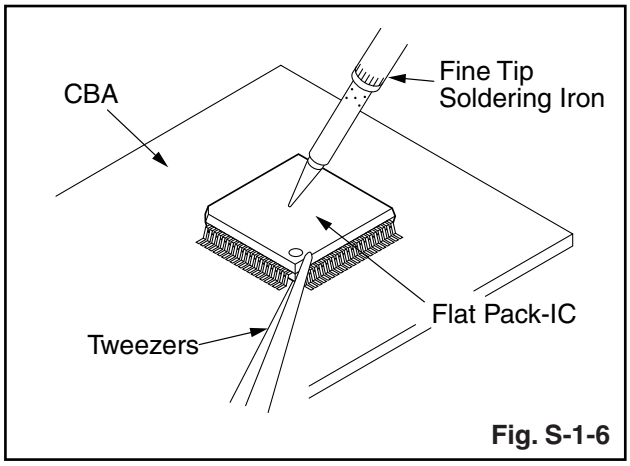


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

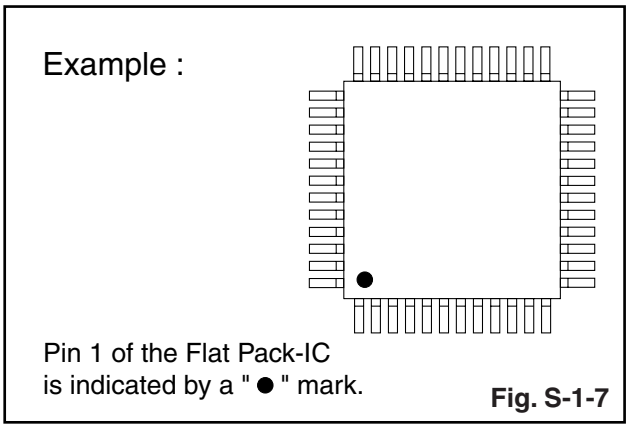


Fig. S-1-7

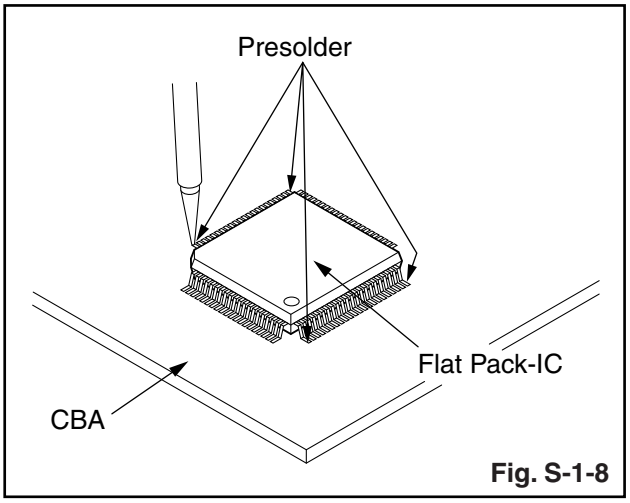


Fig. S-1-8

Instructions for Handling Semi-conductors

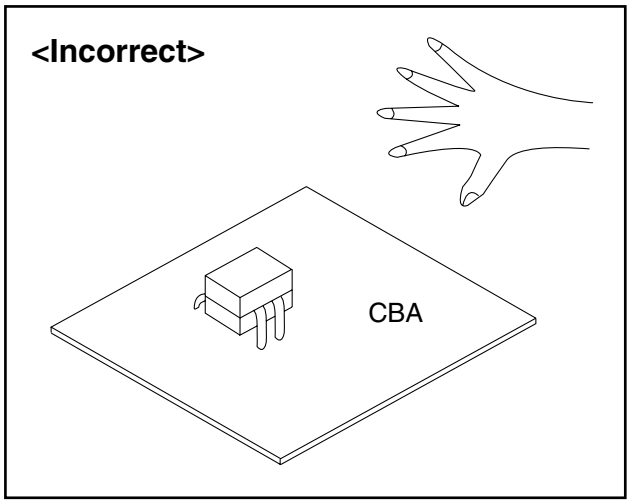
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

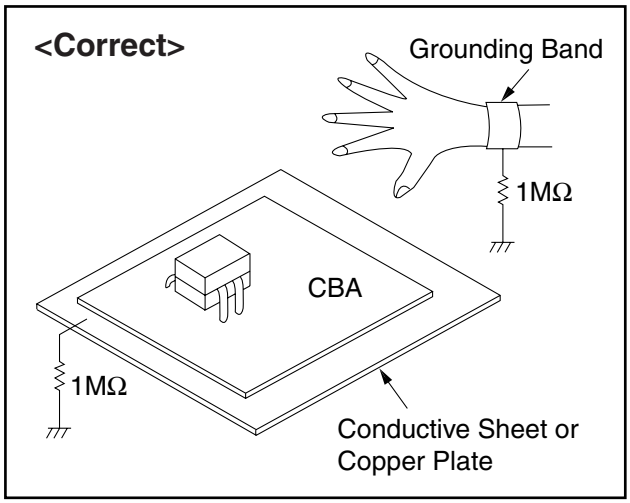
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.

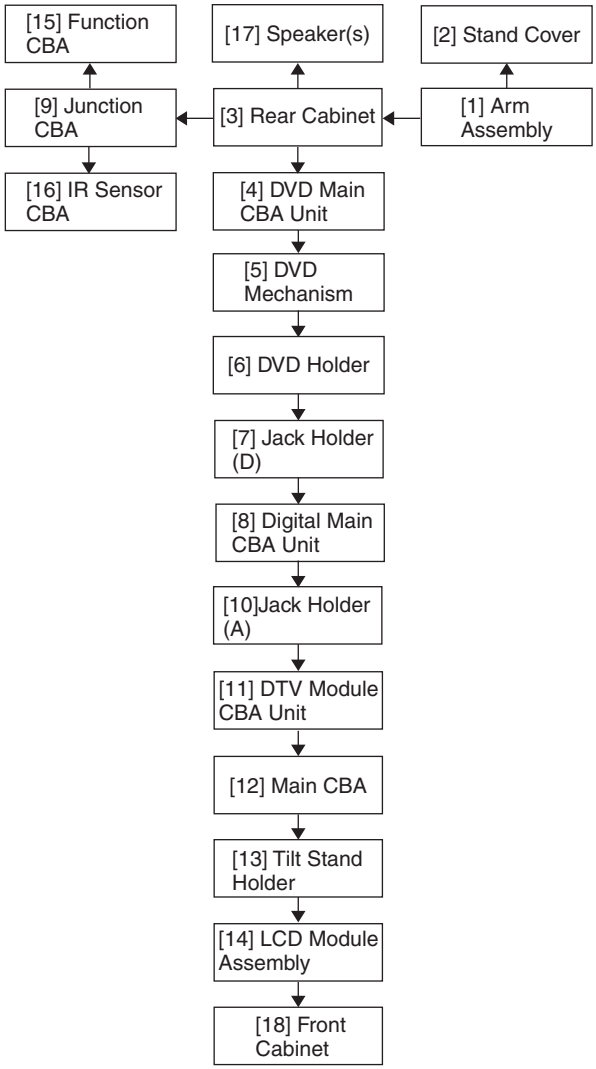




CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts, and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.



2. Disassembly Method

Step/ Loc. No.	Part	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Unclamp/ Desolder	Note
[1]	Arm Assembly	D1	2(S-1), 4(S-2)	---
[2]	Stand Cover	D1	----------	---
[3]	Rear Cabinet	D1	11(S-3)	---
[4]	DVD Main CBA Unit	D2 D5	2(S-4), (S-5), *CN201, *CN301, *CN707, *CN708, *CN801	1
[5]	DVD Mechanism	D2	----------	2 3 4 5 6
[6]	DVD Holder	D2	4(S-6)	---
[7]	Jack Holder(D)	D3	2(S-7), 2(S-8)	---
[8]	Digital Main CBA Unit	D3 D5	2(S-9), *CN1501, *CN1502, *CN1503, *CN1504, *CN1901, *CN1902	---
[9]	Junction CBA	D3 D5	*CN705, *CN706, *WH1161B, *WH1162B	---
[10]	Jack Holder(A)	D3	(S-10)	---
[11]	DTV Module CBA Unit	D3 D5	6(S-11), *CN61, *CN401, *CN402, *CN801, *CN802	---
[12]	Main CBA	D3 D5	----------	---
[13]	Tilt Stand Holder	D4	(S-12)	---
[14]	LCD Module Assembly	D4	6(S-13), Earth Plate	---
[15]	Function CBA	D4 D5	3(S-14)	---
[16]	IR Sensor CBA	D4 D5	2(S-15)	---
[17]	Speaker (s)	D4	4(S-16)	---
[18]	Front Cabinet	D4	----------	---
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

Note:

(1) Order of steps in procedure. When reassembling, follow the steps in reverse order. These numbers are also used as the Identification (location) No. of parts in figures.

(2) Parts to be removed or installed.

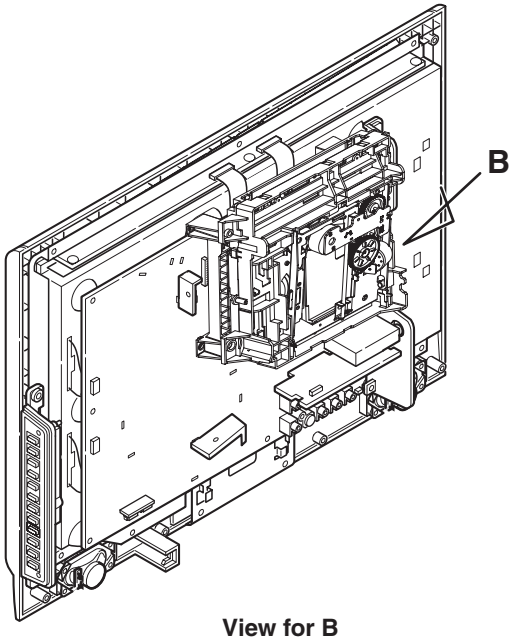
(3) Fig. No. showing procedure of part location

(4) Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P = Spring, L = Locking Tab, S = Screw,
CN = Connector
* = Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)

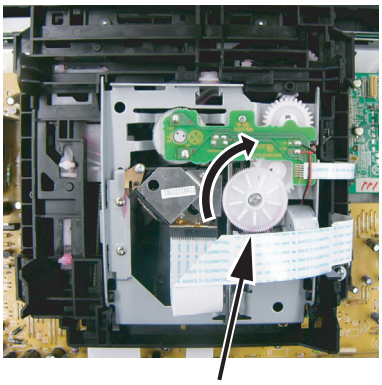
(5) Refer to the following "Reference Notes in the Table."

Reference Notes

1. **CAUTION 1:** Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc., during unpacking or repair work.
To avoid damage of pickup follow next procedures.
   1) Short the three short lands of FPC cable with solder before removing the FFC cable (CN201) from it. If you disconnect the FFC cable (CN201), the laser diode of pickup will be destroyed. (Fig. D2)
   2) Disconnect the Connectors (CN301), and (CN801). Remove Screw (S-5) and remove the DVD Main CBA Unit. (Fig. D2)
2. **Reassembly Notes of New DVD Mechanism:**
   a. To remove the Chassis Cover, remove two screws A as shown in Fig. D2.
   b. To avoid damage of the pickup unit (laser diode), confirm that the three short lands (either of two places) are shorted out by soldering between them as shown in View A in Fig. D2.
   c. Connect the FFC cables of the new DVD Mechanism to the three connectors (CN201, CN301, CN801) on the DVD Main CBA Unit.
   d. After confirming that the FFC cables are securely connected to the three connectors, remove the solder from the three short lands. If the solder is not removed, the laser diode will not light and it will not be possible to read discs.
   e. Insert the pin A on the Chassis Cover into the hole A on the Main Chassis as shown in Fig. D2. Then tighten two screws A to install the Chassis Cover.
3. **CAUTION 2:** When reassembling, confirm the FFC cable (CN201) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. D2)
4. **How to eject a disc in emergency**
Press and hold [EJECT] on the unit for more than 5 seconds.
5. **How to eject manually 1**
   1) Remove the Rear Cabinet.
   2) Rotate the gear in the direction of the arrow as shown below.



View for B



The gear is turned to the direction of the arrow.

6. **How to eject manually 2**
   1) Remove the Rear Cabinet.
   2) To remove the DVD Main CBA Unit, remove a screw (S-5) in Fig. D2. Do not disconnect connectors.
   3) To remove the Chassis Cover, remove two screws A as shown in Fig. D2.
   4) Remove a disc.

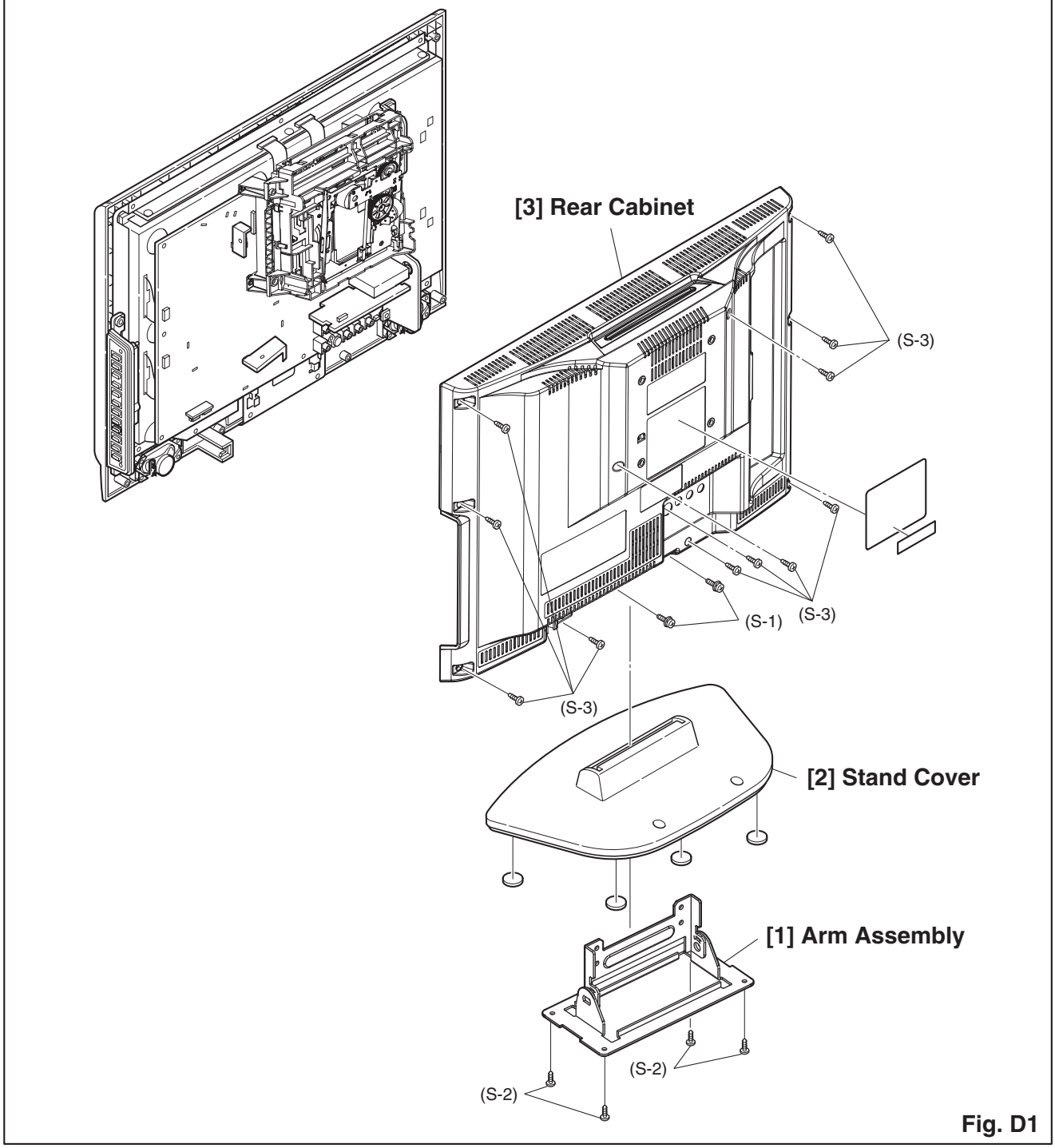
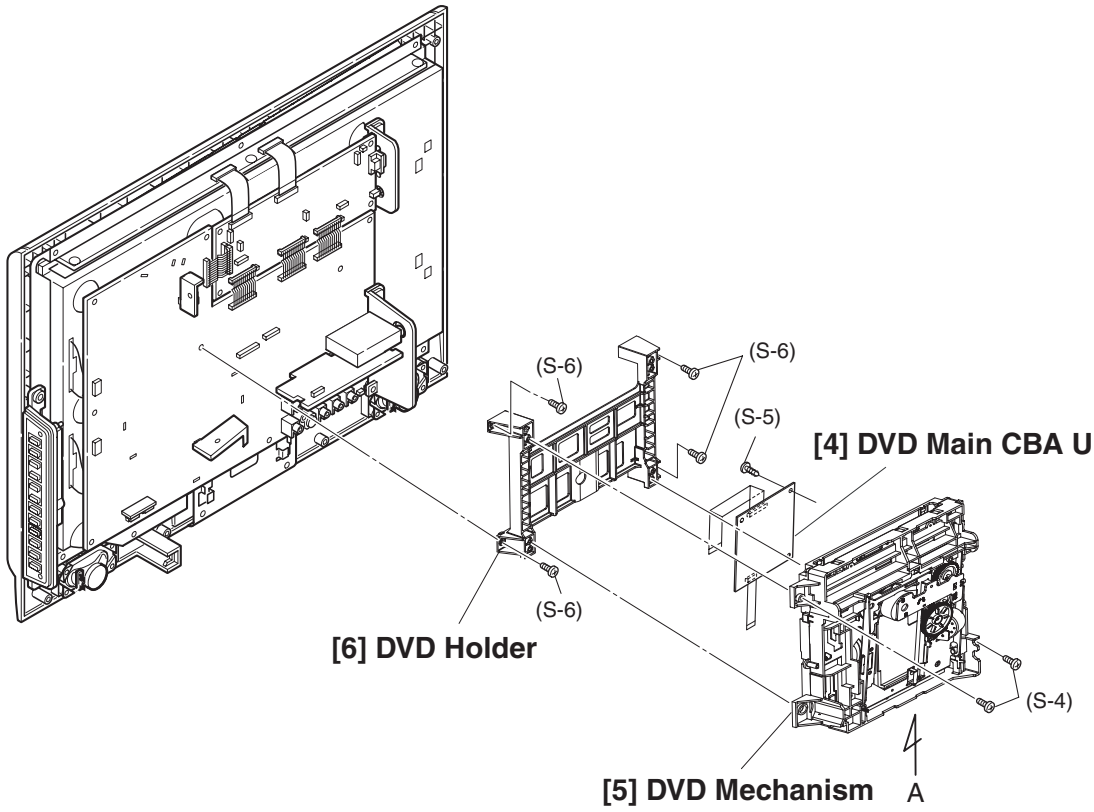
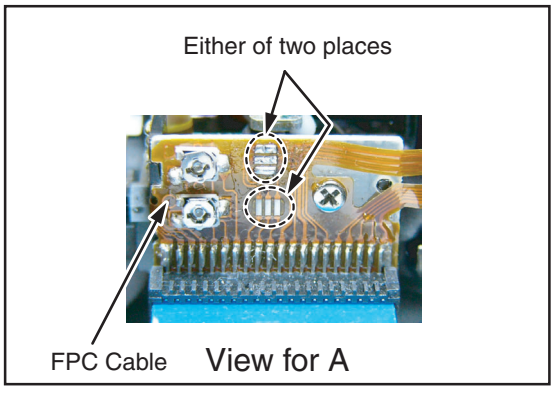


Fig. D1



Remove two screws A, then short the three short lands by soldering as shown in View for A.



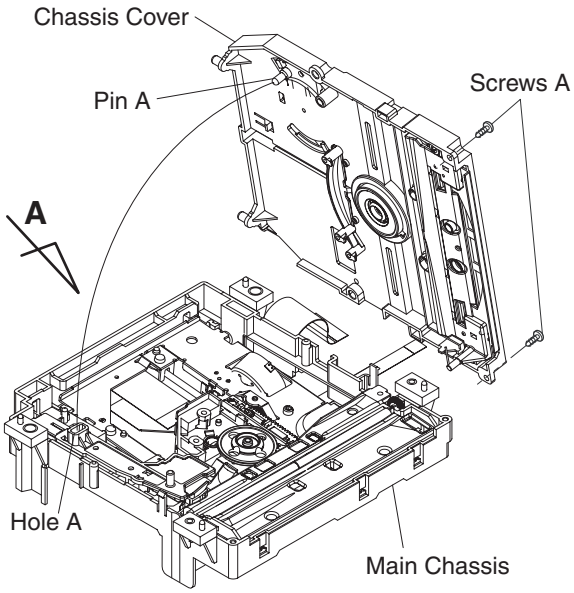


Fig. D2

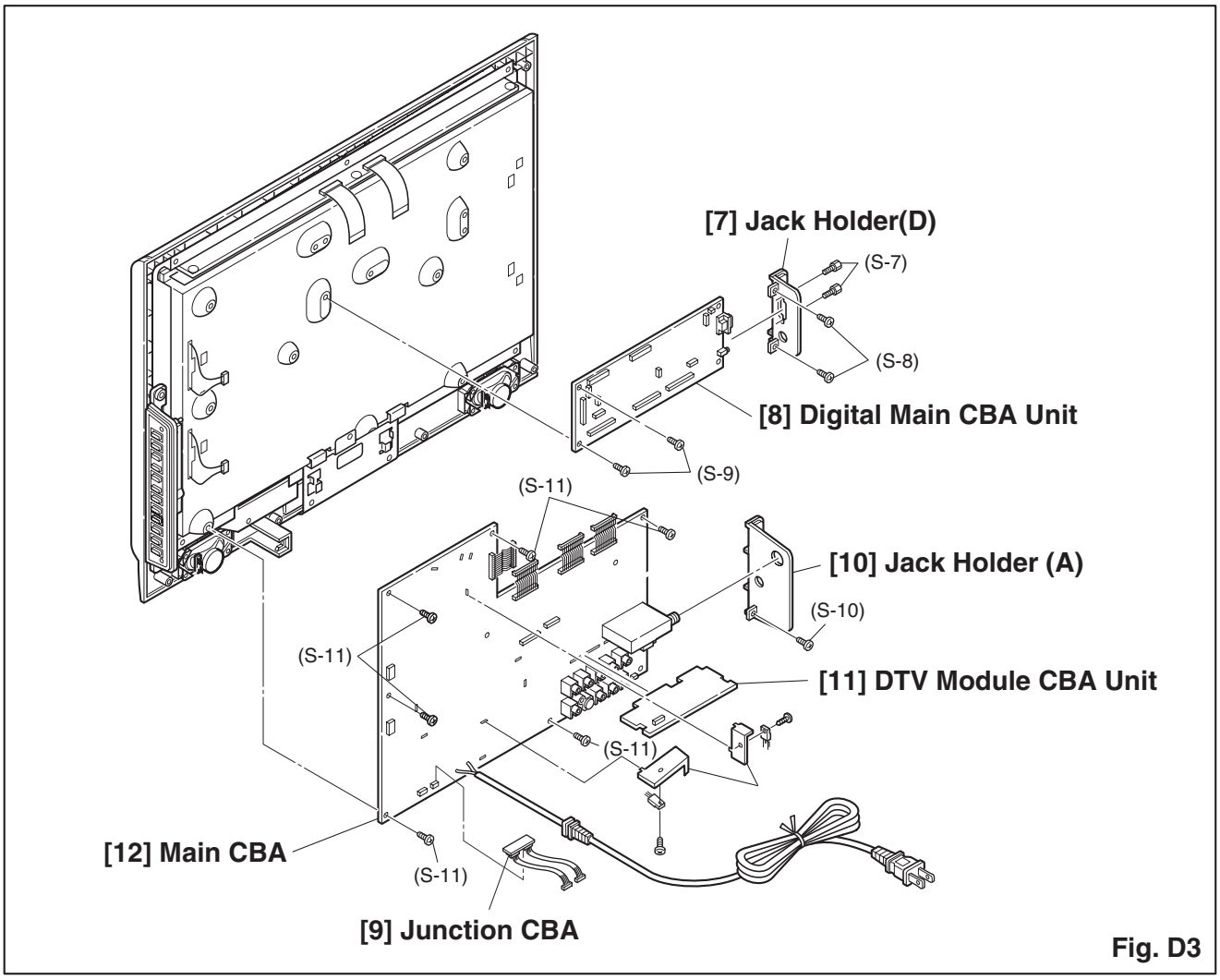

[7] Jack Holder(D)
(S-7)
(S-8)
[8] Digital Main CBA Unit
(S-9)
(S-11)
[10] Jack Holder (A)
(S-10)
(S-11)
[11] DTV Module CBA Unit
(S-11)
[12] Main CBA
(S-11)
[9] Junction CBA

Fig. D3

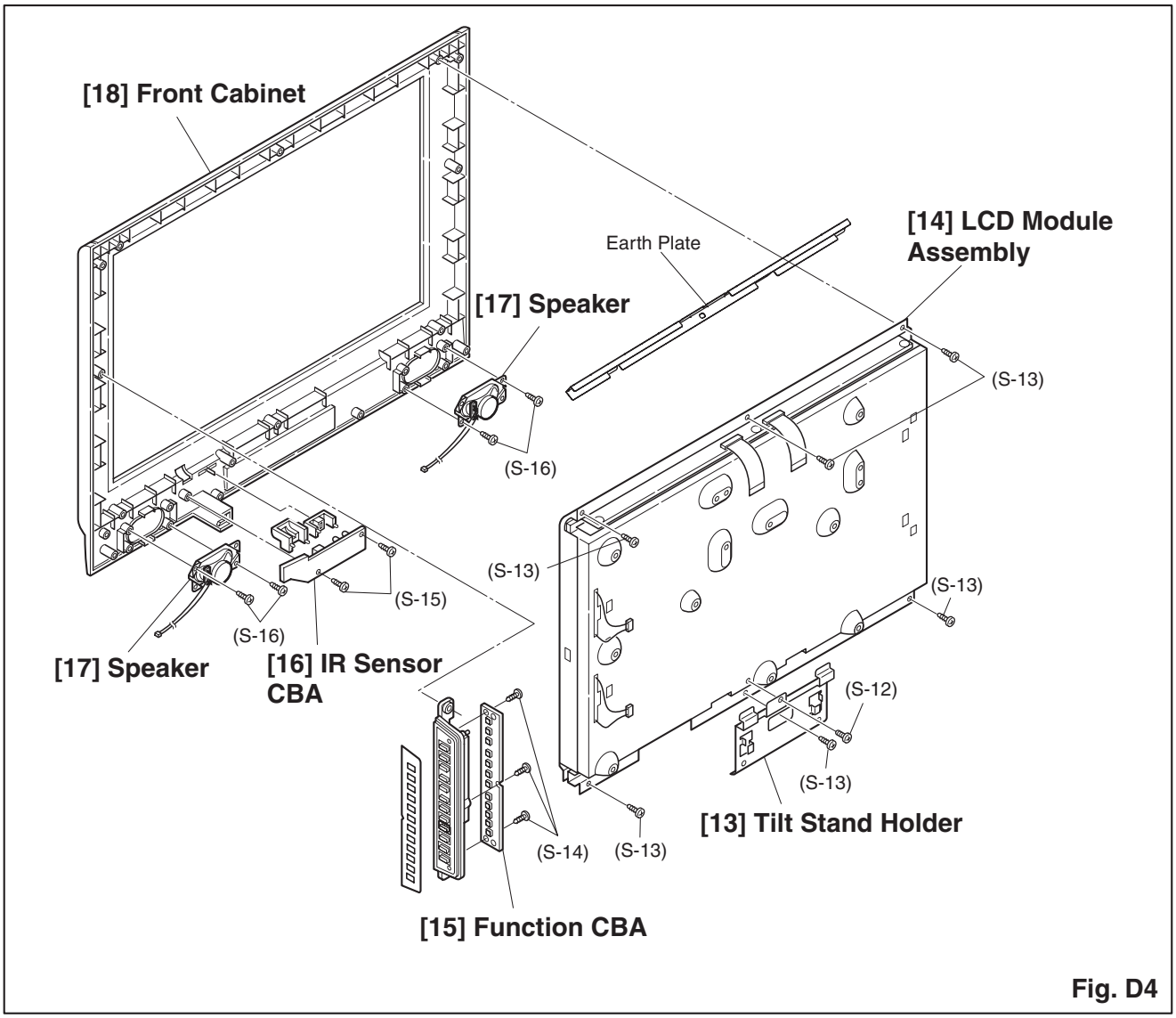

[18] Front Cabinet
Earth Plate
[14] LCD Module Assembly
[17] Speaker
(S-13)
(S-16)
(S-13)
(S-15)
(S-13)
(S-16)
[17] Speaker
[16] IR Sensor CBA
(S-12)
(S-13)
[13] Tilt Stand Holder
(S-14)
(S-13)
[15] Function CBA

Fig. D4

TV Cable Wiring Diagram

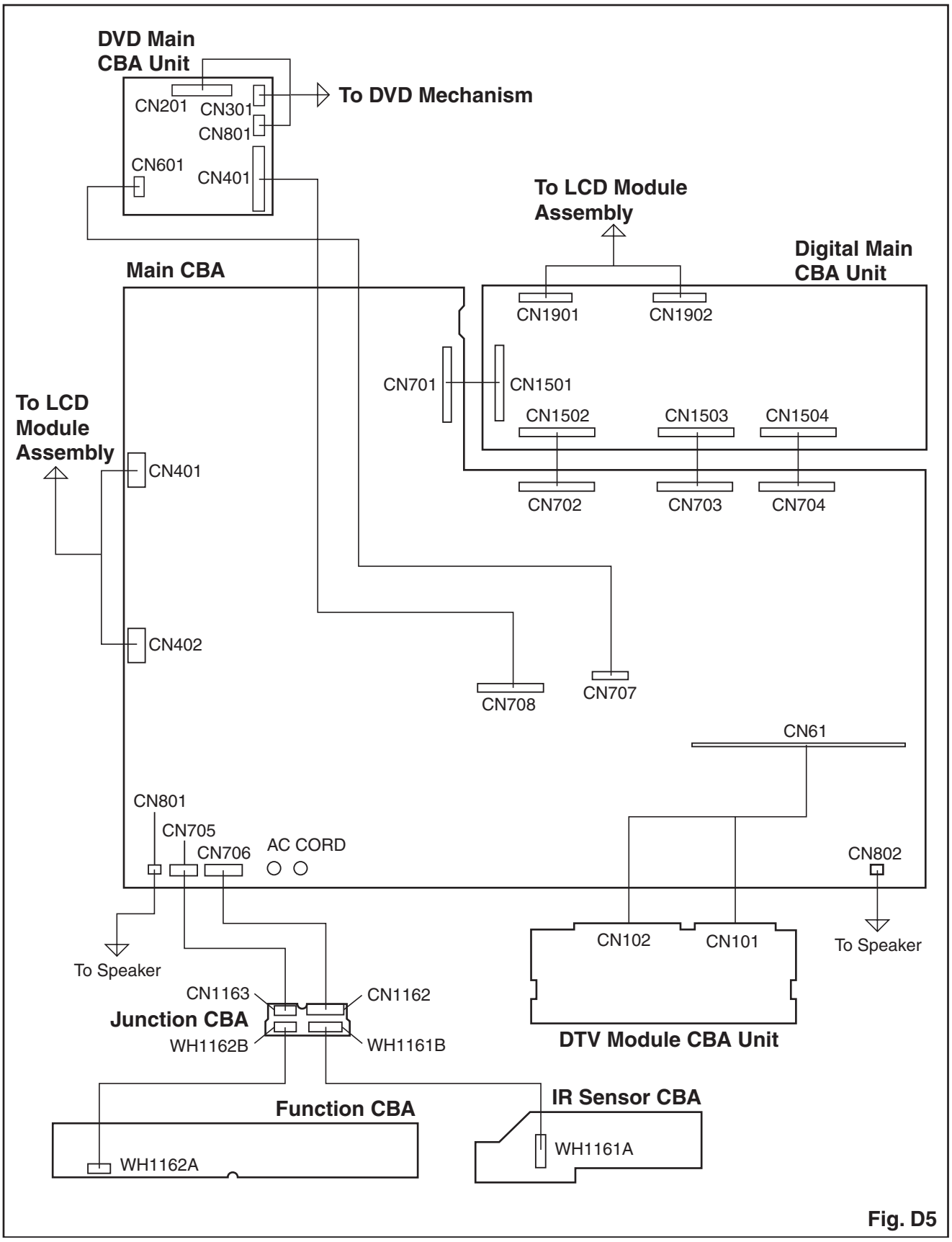


Fig. D5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is abbreviation for "Circuit Board Assembly."

Note: Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed.
Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

1. DC Voltmeter
2. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
3. Remote control unit
4. Color Analyzer

How to make the Service remote control unit:

Cut "A" portion of the attached remote control unit as shown in Fig. 1.

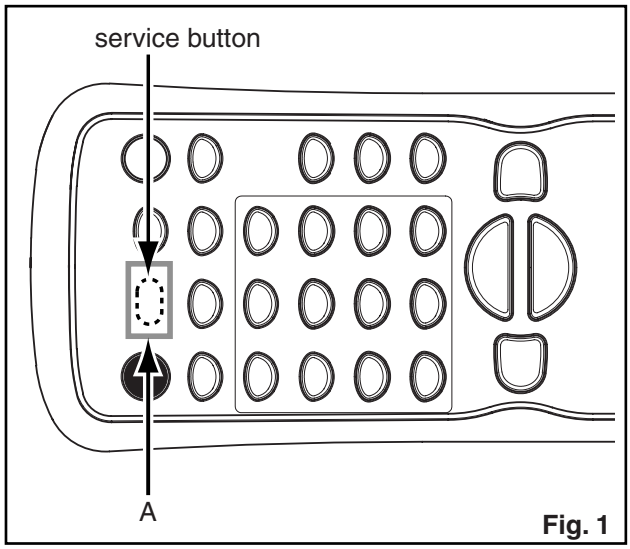


Fig. 1

How to set up the service mode:

Service mode:

1. Use the service remote control unit.
2. Turn the power on.
3. Press the service button on the service remote control unit as shown in Fig. 1.

1. Initial Setting

General: Enter the Service mode.

Set the each initial data as shown on table 1 below.

Table 1: Initial Data

Item		Button (on the service remote control)	Data Value
NTSC RF	BRT	[SETUP (NTSC)] → [1]	123
	CNT		184
	CLR-R		100
	CLR-B		100
	TNT		123
	SHR		140
NTSC CVBS	BRT	[SETUP (NTSC)] → [2]	123
	CNT		184
	CLR-R		130
	CLR-B		130
	TNT		123
	SHR		140
NTSC YC	BRT	[SETUP (NTSC)] → [3]	123
	CNT		184
	CLR-R		130
	CLR-B		130
	TNT		123
	SHR		140
YUV D1	BRT	[SETUP (YUV)] → [1]	120
	CNT		210
	CLR-R		185
	CLR-B		185
	TNT		123
	SHR		140

Item		Button (on the service remote control)	Data Value
YUV D2	BRT	[SETUP (YUV)] → [2]	121
	CNT		136
	CLR-R		165
	CLR-B		165
	TNT		123
	SHR		140
YUV D3	BRT	[SETUP (YUV)] → [3]	123
	CNT		139
	CLR-R		165
	CLR-B		165
	TNT		123
	SHR		143
YUV D4	BRT	[SETUP (YUV)] → [4]	121
	CNT		136
	CLR-R		165
	CLR-B		165
	TNT		123
	SHR		120
DTV D1	BRT	[SETUP (DTV)] → [1]	136
	CNT		136
	CLR-R		165
	CLR-B		165
	TNT		123
	SHR		112
DTV D2	BRT	[SETUP (DTV)] → [2]	128
	CNT		136
	CLR-R		165
	CLR-B		165
	TNT		123
	SHR		112
DTV D3	BRT	[SETUP (DTV)] → [3]	128
	CNT		136
	CLR-R		165
	CLR-B		165
	TNT		123
	SHR		143

Item		Button (on the service remote control)	Data Value
DTV D4	BRT	[SETUP (DTV)] → [4]	128
	CNT		136
	CLR-R		165
	CLR-B		165
	TNT		123
	SHR		143
PC	BRT	[SETUP (PC)] → [1]	128
	CNT		128
C/D1	*COR	[VOL. ▽] → [1]	128
	COG	[VOL. ▽] → [2]	128
	*COB	[VOL. ▽] → [3]	128
	*DR	[VOL. ▽] → [4]	134
	DG	[VOL. ▽] → [5]	128
	*DB	[VOL. ▽] → [6]	119
C/D2	*COR	[VOL. ▽] → [1]	128
	COG	[VOL. ▽] → [2]	128
	*COB	[VOL. ▽] → [3]	128
	*DR	[VOL. ▽] → [4]	131
	DG	[VOL. ▽] → [5]	128
	*DB	[VOL. ▽] → [6]	118
C/D3	*COR	[VOL. ▽] → [1]	128
	COG	[VOL. ▽] → [2]	128
	*COB	[VOL. ▽] → [3]	128
	*DR	[VOL. ▽] → [4]	128
	DG	[VOL. ▽] → [5]	128
	*DB	[VOL. ▽] → [6]	128
BRIGHT		[0]	255
NORMAL		[0]	175
DARK		[0]	140
DVD VOL UP DOWN		[VOL. △]	0
CD VOL DOWN		[VOL. △]	7
DVD BRT DOWN		[VOL. △]	0
DVD CNT DOWN		[VOL. △]	0
DVD SHR DOWN		[VOL. △]	0
STEREO TYPE		[VOL. ▽]	MTS
ACCESS CODE		[VOL. ▽]	ON

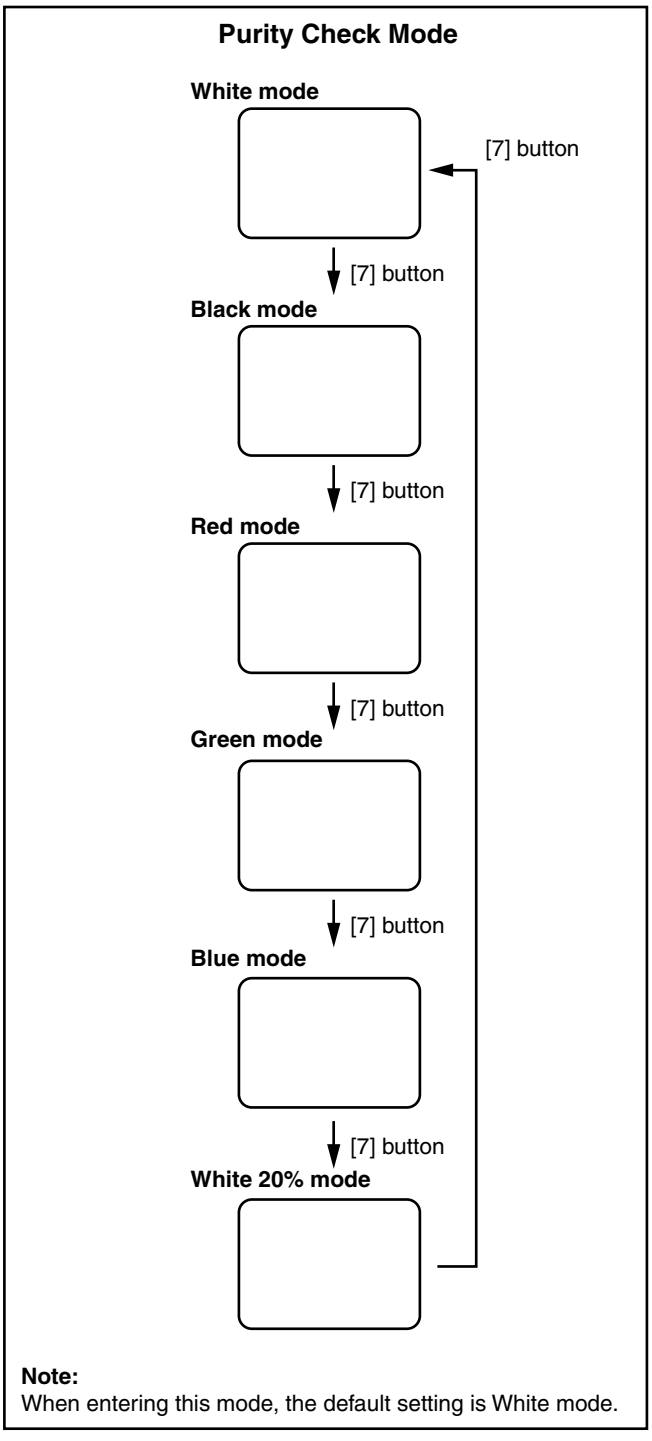
Item	Button (on the service remote control)	Data Value
LAST POWER	[VOL. ▽]	ON
TUNER	[VOL. ▽]	S or M (Auto Change)
QAM	[VOL. ▽]	135
DTV-H	[VOL. ▽]	B
RACK-GEAR	[VOL. ▽]	ON
D-SOUND	[VOL. ▽]	STEREO
ANALOG-NS	[VOL. ▽]	OFF
COLOR TEMP.	[VOL. ▽]	NORMAL
MP2 AUDIO	[VOL. ▽]	OFF
PC	[VOL. ▽]	ON

NOTE: * These data value will be changed by the White Balance Adjustment.

2. Purity Check Mode

This mode cycles through full-screen displays of red, green, blue, and white to check for non-active pixels.

1. Enter the Service mode.
2. Each time pressing [7] button on the service remote control unit, the display changes as follows.



Note:
When entering this mode, the default setting is White mode.

3. Auto Calibration [Component]

Purpose: To bring the color adjustment of each component into standard alignment.

Symptom of Misadjustment: If this adjustment is incorrect, component signals do not reproduce the corresponding color.

1. Input 1080i 100% Color Bar signal.
2. Enter the service mode.
3. To enter the Auto Calibration adjustment mode, press [6] button on the service remote control unit.
4. To start auto adjustment, press [1] button on the service remote control unit.
   - In the auto adjustment mode, “Please wait” appears on the screen.
   - Upon completion, “OK” appears on the screen.

4. Auto Calibration [DTV]

Purpose: To bring the color adjustment of DTV into standard alignment.

Symptom of Misadjustment: If this adjustment is incorrect, DTV signals do not reproduce the corresponding color.

1. Enter the service mode.
2. To enter the Auto Calibration adjustment mode, press [6] button on the service remote control unit.
3. To start auto adjustment, press [2] button on the service remote control unit.
   - In the auto adjustment mode, “Please wait” appears on the screen.
   - Upon completion, “OK” appears on the screen.

5. Auto Calibration [PC]

Purpose: To bring the color adjustment of PC into standard alignment.

Symptom of Misadjustment: If this adjustment is incorrect, PC signals do not reproduce the corresponding color.

1. Input XGA 100% White signal.
2. Enter the service mode.
3. To enter the Auto Calibration adjustment mode, press [6] button on the service remote control unit.
4. To start auto adjustment, press [3] button on the service remote control unit.
   - In the auto adjustment mode, “Please wait” appears on the screen.
   - Upon completion, “OK” appears on the screen.

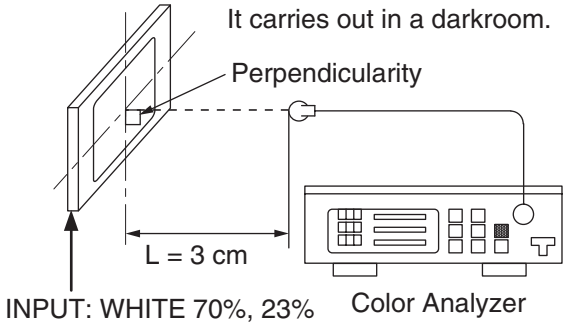
The following adjustment normally are not attempted in the field. Only when replacing the LCD Panel then adjust as a preparation.

6. White Balance Adjustment [Video]

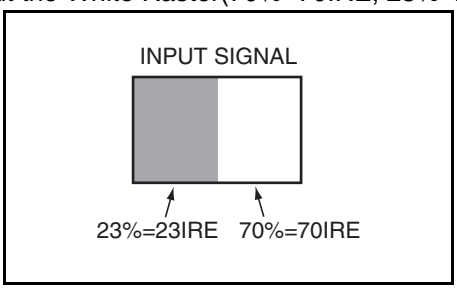
Purpose: To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment: White becomes bluish or reddish.

Test Point	Adj. Point	Mode	Input
Screen	[VOL. ▽] button	**[VIDEO1]** C/D1	White Raster (APL 70%) or (APL 23%)
M. EQ.		**Spec.**	
Pattern Generator, Color analyzer		x= 0.279 ± 0.005 y= 0.272 ± 0.005	
Figure			



1. Operate the unit for more than 20 minutes.
2. Input the White Raster(70%=70IRE, 23%=23IRE).



3. Set the color analyzer to the CHROMA mode and bring the optical receptor to the center on the LCD-Panel surface after zero point calibration as shown above.
   Note: The optical receptor must be set perpendicularly to the LCD Panel surface.
4. Enter the Service mode. Press [VOL. ▽] button on the service remote control unit and select “C/D1” mode.

5. **[CUTOFF]**
   Press [1] button to select “COR” for Red Cutoff adjustment. Press [3] button to select “COB” for Blue Cutoff adjustment.
   [DRIVE]
   Press [4] button to select “DR” for Red Drive adjustment. Press [6] button to select “DB” for Blue Drive adjustment.
6. In each color mode, press [CH. ▲ / ▼] buttons to adjust the values of color.
7. Adjust Cutoff and Drive so that the color temperature becomes 11000°K (x= 0.279 / y= 0.272 ±0.005).

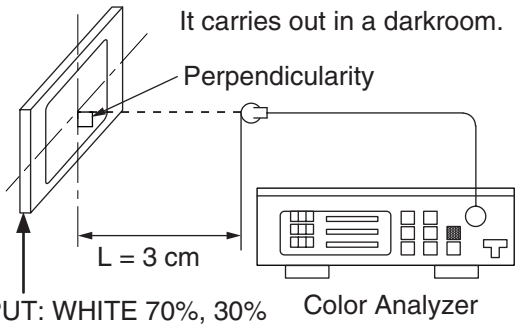
The following adjustment normally are not attempted in the field. Only when replacing the LCD Panel then adjust as a preparation.

7. White Balance Adjustment [Component / DTV]

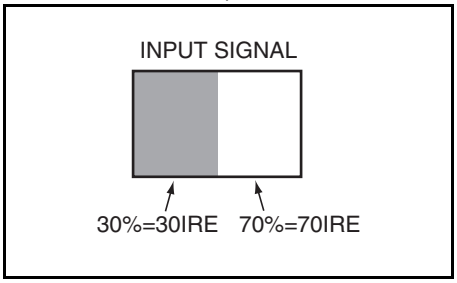
Purpose: To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment: White becomes bluish or reddish.

Test Point	Adj. Point	Mode	Input
Screen	[VOL. ▽] button	**[VIDEO2]** C/D2	White Raster (APL 70%) or (APL 30%)
M. EQ.		**Spec.**	
Pattern Generator, Color analyzer		x= 0.279 ± 0.005 y= 0.272 ± 0.005	
Figure			



1. Operate the unit for more than 20 minutes.
2. Input the White Raster(70%=70IRE, 30%=30IRE).



3. Set the color analyzer to the CHROMA mode and bring the optical receptor to the center on the LCD-Panel surface after zero point calibration as shown above.
   Note: The optical receptor must be set perpendicularly to the LCD Panel surface.
4. Enter the Service mode. Press [VOL. ▽] button on the service remote control unit and select “C/D2” mode.
5. **[CUTOFF]**
   Press [1] button to select “COR” for Red Cutoff adjustment. Press [3] button to select “COB” for Blue Cutoff adjustment.
   [DRIVE]
   Press [4] button to select “DR” for Red Drive adjustment. Press [6] button to select “DB” for Blue Drive adjustment.
6. In each color mode, press [CH. ▲ / ▼] buttons to adjust the values of color.
7. Adjust Cutoff and Drive so that the color temperature becomes 11000°K (x= 0.279 / y= 0.272 ±0.005).

HOW TO INITIALIZE THE LCD TV/DVD

To put the program back at the factory-default, initialize the LCD TV/DVD using the following procedure.

< DVD Section >

1. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

"*******" differs depending on the models.

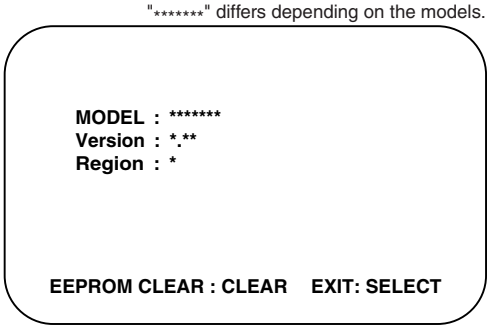


Fig. g

2. Press [CLEAR] button on the remote control unit.
   Fig. h appears on the screen.

"*******" differs depending on the models.

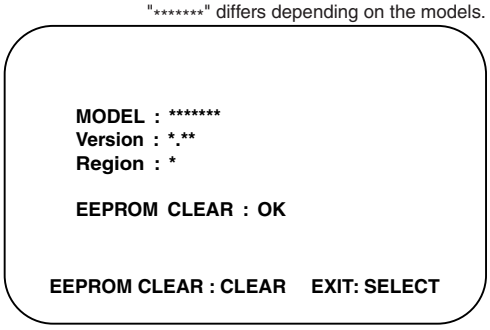


Fig. h

   When “OK” appears on the screen, the factory default will be set.
3. To exit this mode, press [CH. ▲ / ▼] button to go to TV mode, or press [POWER] button to turn the power off.

< LCD TV Section >

1. Turn the power on.
2. To enter the service mode, press the service button on the service remote control unit. (Refer to page 6-1.)
   - To cancel the service mode, press [POWER] button on the service remote control unit.
3. Press [DISPLAY] button on the service remote control unit to initialize the LCD television.
4. "FF" will appear in the upper left of the screen. "FF" color will change to red from white when initialzing is complete.

FIRMWARE RENEWAL MODE

1. Turn the power on and press [EJECT] button on the remote control unit to put the LCD TV/DVD into DVD mode. Then remove the disc.
2. To put the LCD TV/DVD into F/W version up mode, press [9], [8], [7], [6], and [MODE] buttons on the remote control unit in that order.
   Fig. a appears on the screen.

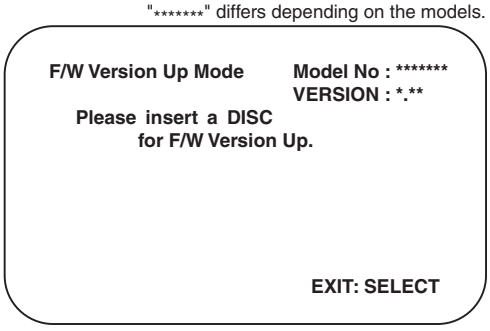


Fig. a Version Up Mode Screen

3. Insert the disc for version up into the disc slot.
4. The LCD TV/DVD enters the F/W version up mode automatically. Fig. c appears on the screen. If you enter the F/W for different models, “Disc Error” will appear on the screen, then the disc will be ejected automatically.

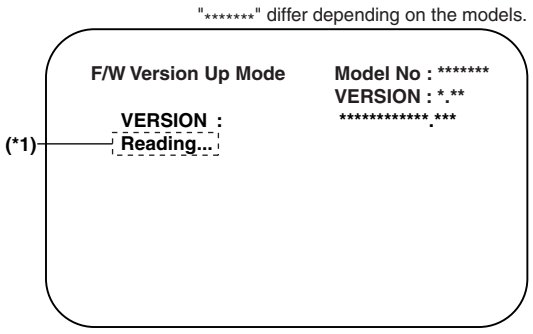


Fig. c Programming Mode Screen

The appearance shown in (*1) of Fig. c is described as follows:

No.	Appearance	State
1	Reading...	Sending files into the memory
2	Erasing...	Erasing previous version data
3	Programming...	Writing new version data

5. After programming is finished, the disc will be ejected automatically. Fig. e appears on the screen and the checksum will be shown in (*2).

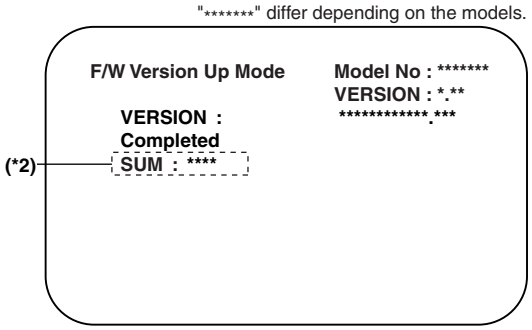


Fig. e Completed Program Mode Screen

At this time, no button is available.

6. Remove the disc.
7. Unplug the AC cord from the AC outlet. Then plug it again.
8. Press [EJECT] button on the remote control unit to put the LCD TV/DVD into DVD mode again.
9. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

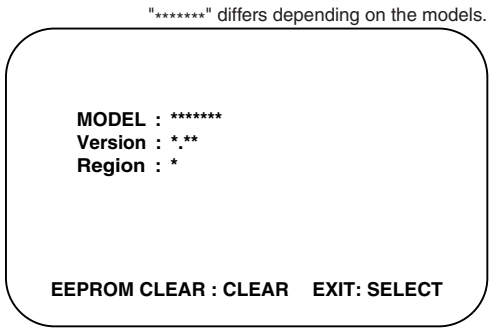


Fig. g

10. Press [CLEAR] button on the remote control unit.
    Fig. h appears on the screen.

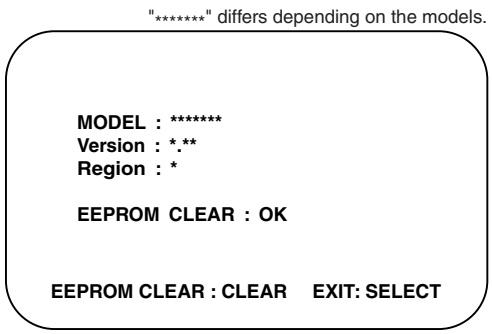


Fig. h

When “OK” appears on the screen, the factory default will be set. Then the firmware renewal mode is complete.

11. To exit this mode, press [CH. ▲ / ▼] button to go to TV mode, or press [POWER] button to turn the power off.

TROUBLESHOOTING

FLOW CHART NO.1

The power cannot be turned on.

↓

Is the fuse (F601) normal? — No → See FLOW CHART No.2 <The fuse blows out.>

↓ Yes

Is normal state restored when once unplugged power cord is plugged again several seconds? — No → Check if there is any leak or short-circuiting on the primary circuit component, and service it if defective. (C615, D605, D606, D607, D608, Q601, Q603, T601)

↓ Yes

Is the INV+22V line voltage normal? — No → (same as above)

↓ Yes

Check each rectifying circuit of the secondary circuit and service it if defective.

FLOW CHART NO.2

The fuse blows out.

↓

Check the presence that the primary component is leaking or shorted and service it if defective.

Check the presence that the rectifying diode or circuit is shorted in each rectifying circuit of secondary side, and service it if defective.

↓

After servicing, replace the fuse.

FLOW CHART NO.3

When the output voltage fluctuates.

↓

Does the photocoupler circuit on the secondary side operate normally? — No → Check IC601, D933, Q913 and their periphery, and service it if defective.

↓ Yes

Check IC601, D613, D614 and their periphery, and service it if defective.

FLOW CHART NO.4

When buzz sound can be heard in the vicinity of power circuit.

↓

Check if there is any short-circuit on the rectifying diode and the circuit in each rectifying circuit of the secondary side, and service it if defective. (IC904, IC905, Q901, Q902, Q905, Q907, Q908, Q909, Q917, Q918, Q922, Q927, Q930, Q934, Q935, D901, D902, D903, D906, D907, D909, D911, D914, D932)

FLOW CHART NO.5

+35V is not output.

↓

Is approximately 35V voltage supplied to the cathode of D909? — No → Check C907, D909 and their periphery circuit, and service it defective.

↓ Yes

Check if there is any leak or short-circuit on the loaded circuit, and service it if defective.

FLOW CHART NO.6

VT+33V is not output.

↓

Is approximately 35V voltage supplied to the cathode of D909?

No → See FLOW CHART No.5

↓ Yes

Check D928, R952 and their periphery circuit, and service it if defective.

FLOW CHART NO.7

LCD+24.5V is not output.

↓

Is approximately 35V voltage supplied to the emitter of D930?

No → See FLOW CHART No.5

↓ Yes

Check Q929, Q930, P-ON-H1 line and their periphery, and service it if defective.

FLOW CHART NO.8

DVD-ON+1.8V is not output.

↓

Is approximately 3.7V voltage supplied to the cathode of D911?

No → Check C908, D911 and their periphery circuit, and service it if defective.

↓ Yes

Check IC904 and their periphery circuit, and service it if defective.

FLOW CHART NO.9

P-ON+1.5V is not output.

↓

Is approximately 3.4V voltage supplied to the collector of Q922?

No → See FLOW CHART No.8

↓ Yes

Check IC908, Q910, Q919, Q922, POW-CONT2 line and their periphery, and service it if defective.

FLOW CHART NO.10

EV+12V is not output.

↓

Is approximately 12V voltage supplied to the cathode of D902?

No → Check C902, D902 and their periphery circuit, and service it if defective.

↓ Yes

Check if there is any leak or short-circuit on the loaded circuit, and service it if defective.

FLOW CHART NO.11

P-ON+3.3V is not output.

Is approximately 6V voltage supplied to the cathode of D906?

No → Check C905, D906 and their periphery circuit, and service it if defective.

Yes

Is the "H" signal (approximately 0.7V) inputted to the base of Q925?

No → Check POW-CONT1 line and their periphery circuit, and service it if defective.

Yes

Check IC910, Q902, Q924, Q925 and their periphery circuit, and service it if defective.

FLOW CHART NO.12

DTV-ON+3.3V is not output.

Is approximately 6V voltage supplied to the collector of Q908?

No → See FLOW CHART No.11

Yes

Check IC911, Q908, and their periphery circuit, and service it if defective.

FLOW CHART NO.13

DTV-ON+2.5V is not output.

Is approximately 6V voltage supplied to the collector of Q909?

No → See FLOW CHART No.11

Yes

Check IC912, Q909 and their periphery circuit, and service it if defective.

FLOW CHART NO.14

DV+5V is not output.

Is approximately 6V voltage supplied to the cathode of D907?

No → Check C906, D907 and their periphery circuit, and service it if defective.

Yes

Check if there is any leak or short-circuit on the loaded circuit, and service it if defective.

FLOW CHART NO.15

P-ON+5V is not output. (P-ON+9V is outputted normally.)

↓

Is approximately 10V voltage supplied to the cathode of D903?

No → Check C903, D903 and their periphery circuit, and service it if defective.

↓ Yes

Is approximately 6V voltage supplied to the base of Q927?

No → Check D930, R1003 and their periphery circuit, and service it if defective.

↓ Yes

Replace Q927.

FLOW CHART NO.16

DTV-ON+5V is not output.

↓

Is approximately 10V voltage supplied to the emitter of Q905?

No → See FLOW CHART No.15

↓ Yes

Is approximately 7.5V voltage supplied to the base of Q907?

No → Check Q905, Q906, DTV-ON-H line and their periphery circuit, and service it if defective.

↓ Yes

Replace Q907.

FLOW CHART NO.17

INV+22V is not output.

↓

Is approximately 22V voltage supplied to the collector of D901?

No → Check C901, D901 and their periphery circuit, and service it if defective.

↓ Yes

Check if there is any leak or short-circuit on the loaded circuit, and service it if defective.

FLOW CHART NO.18

LCD+13V is not output.

↓

Is approximately 19V voltage supplied to the collector of Q935?

No → See FLOW CHART No.17

↓ Yes

Is approximately 14V voltage supplied to the base of Q935?

No → See FLOW CHART No.7

↓ Yes

Check IC913, Q935 and there periphery circuit, and service it if defective.

FLOW CHART NO.19

P-ON+9V is not output.

Is approximately 20V voltage supplied to the collector of Q918?

No → See FLOW CHART No.17

Yes

Is approximately 10V voltage supplied to the base of Q918?

No → Check Q916, Q923, P-ON-H1 line and there periphery circuit, and service it if defective.

Yes

Replace Q918.

FLOW CHART NO.20

AL+3.3V is not output.

Is approximately 22V voltage supplied to the Pin(1) of IC905?

No → See FLOW CHART No.17

Yes

Is approximately 7V voltage supplied to the collector of Q901?

No → Check IC905 and there periphery circuit, and service it if defective.

Yes

Check IC909, Q901 and there periphery circuit, and service it if defective.

FLOW CHART NO.21

LCD+3.3V is not output.

Is approximately 3.3V voltage supplied to the emitter of Q917?

No → See FLOW CHART No.20

Yes

Is "H" signal (approximately 0.7V) inputted to the base of Q928?

No → Check P-ON-H1 line and there periphery circuit, and service it if defective.

Yes

Check Q917, Q928 and there periphery circuit, and service it if defective.

FLOW CHART NO.22

LCD-6.8V is not output.

Is approximately -10V voltage supplied to the Anode of D932?

No → Check C942, D932 and there periphery circuit, and service it if defective.

Yes

Is approximately -9V voltage supplied to the base of Q934?

No → See FLOW CHART No.7

Yes

Replace Q934.

FLOW CHART NO.23

The key operation is not functioning.

↓

Are the contact point and installation state of the key switches (SW1101~SW1111, SW1113) normal?

No → Re-install the switches (SW1101~SW1111, SW1113) correctly or replace the poor switch.

↓ Yes

When pressing each switches (SW1101~SW1111, SW1113) do the voltage of Pin(1, 2) on CN701 increase?

No → Check the switches (SW1101~SW1111, SW1113) and their periphery, and service it if defective.

↓ Yes

Replace Digital Main CBA Unit.

FLOW CHART NO.24

No operation is possible from the remote control unit.

↓

Operation is possible from the remote control unit.

↓

Is 3.3V voltage supplied to Pin(2) terminal of the infrared remote control receiver (RS1161)?

No → Check AL+3.3V line and service it if defective.

↓ Yes

Is the "L" pulse sent out Pin(1) terminal of receiver (RS1161) when the infrared remote control is activated?

No → Replace the infrared remote control receiver (RS1161) or the remote control unit.

↓ Yes

Is the "L" pulse supplied to the Pin(5) of CN701?

No → Check the line between Pin(1) terminal of receiver (RS1161) and Pin(5) of CN701 , and service it if defective.

↓ Yes

Replace Digital Main CBA Unit.

FLOW CHART NO.25

Picture does not appear normally.(Video input)

↓

Are the video signal inputted to the Pin(13) of IC853?

No → Check the line between Pin(13) of IC853 and JK703, and service it if defective.

↓ Yes

Are the video signal outputted to the Pin(14) of IC853?

No → Check IC853 and there periphery circuit, and service it if defective.

↓ Yes

Replace Digital Main CBA Unit or LCD Module Assembly.

FLOW CHART NO.26

Picture does not appear normally.(Tuner input(Analog))

↓

Are the video signal inputted to the Pin(12) of IC853? — No → Check IC31, TU61 and there periphery circuit, and service it if defective.

↓ Yes

Are the video signal outputted to the Pin(14) of IC853? — No → Check IC853 and there periphery circuit, and service it if defective.

↓ Yes

Replace Digital Main CBA Unit or LCD Module Assembly.

FLOW CHART NO.27

Picture does not appear normally.(S-Video input)

↓

Are the video signal outputted to the Pin(8, 10) of CN703? — No → Check the line between Pin(8, 10) of CN703 and JK701, and service it if defective.

Pin(8) : S-VIDEO-C
Pin(10): S-VIDEO-Y

↓ Yes

Replace Digital Main CBA Unit or LCD Module Assembly.

FLOW CHART NO.28

Picture does not appear normally.(Y/Pb/Pr input)

↓

Are the video signal inputted to the Pin(2, 5, 12) of IC854? — No → Check the line between Pin(2, 5, 10) of IC854 and input terminals(JK701, JK707, JK708), and service it if defective.

Pin(2) : VIDEO-Y
Pin(5) : VIDEO-Pb
Pin(12): VIDEO-Pr

↓ Yes

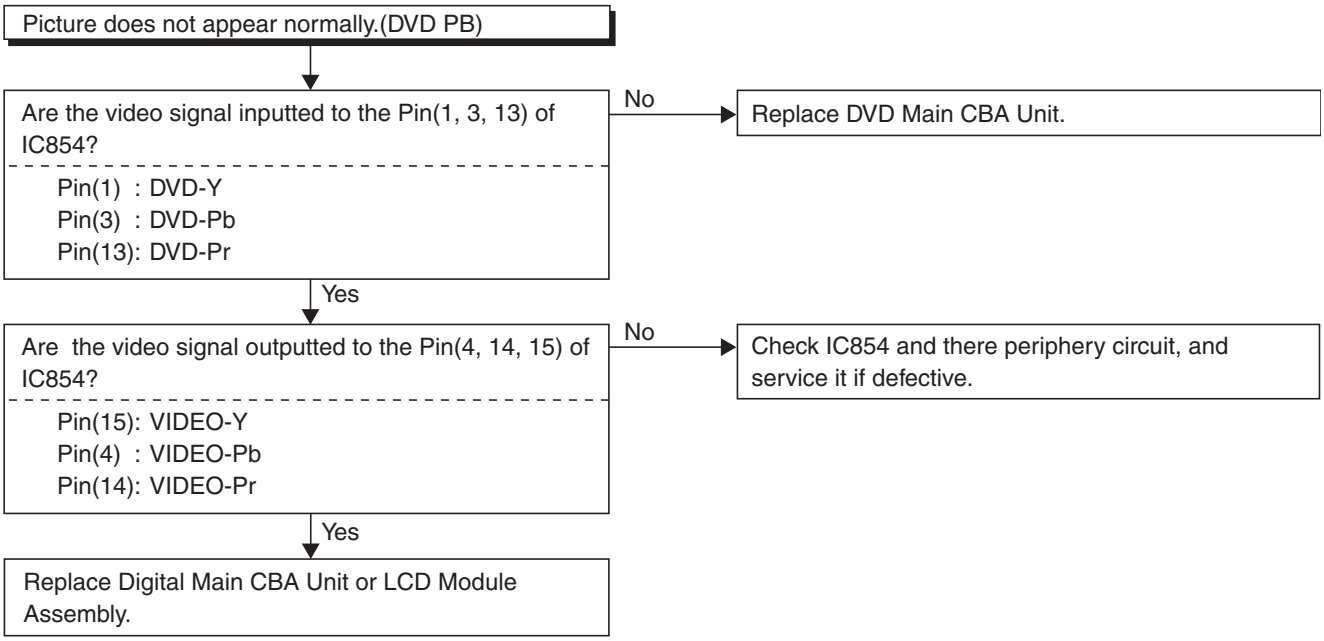
Are the video signal inputted to the Pin(4, 14, 15) of IC854? — No → Check IC854 and there periphery circuit, and service it if defective.

Pin(15): VIDEO-Y
Pin(4) : VIDEO-Pb
Pin(14): VIDEO-Pr

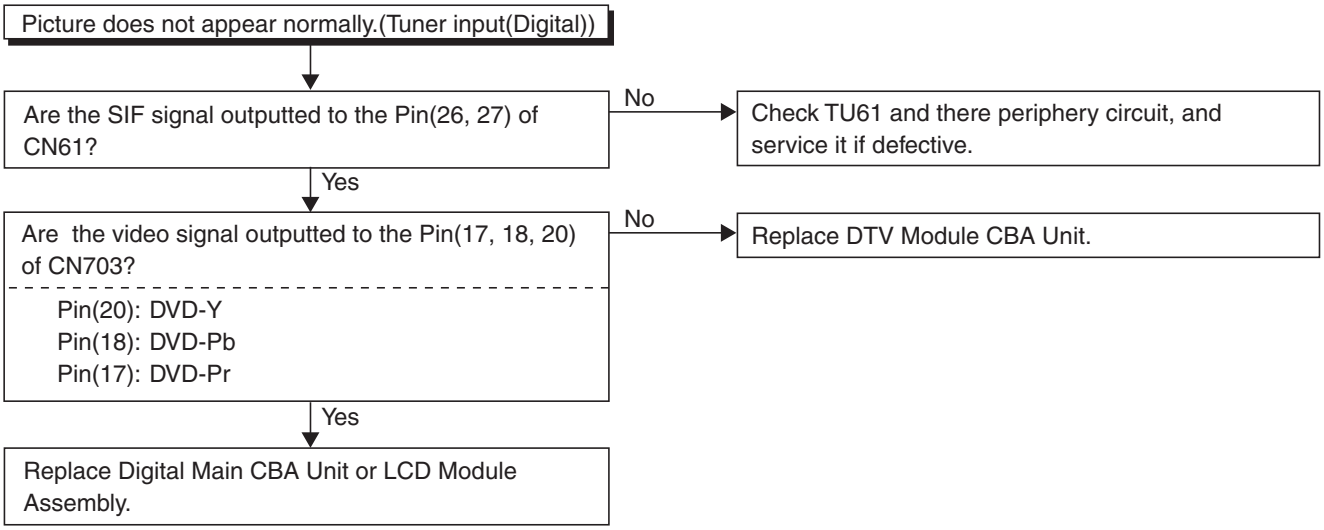
↓ Yes

Replace Digital Main CBA Unit or LCD Module Assembly.

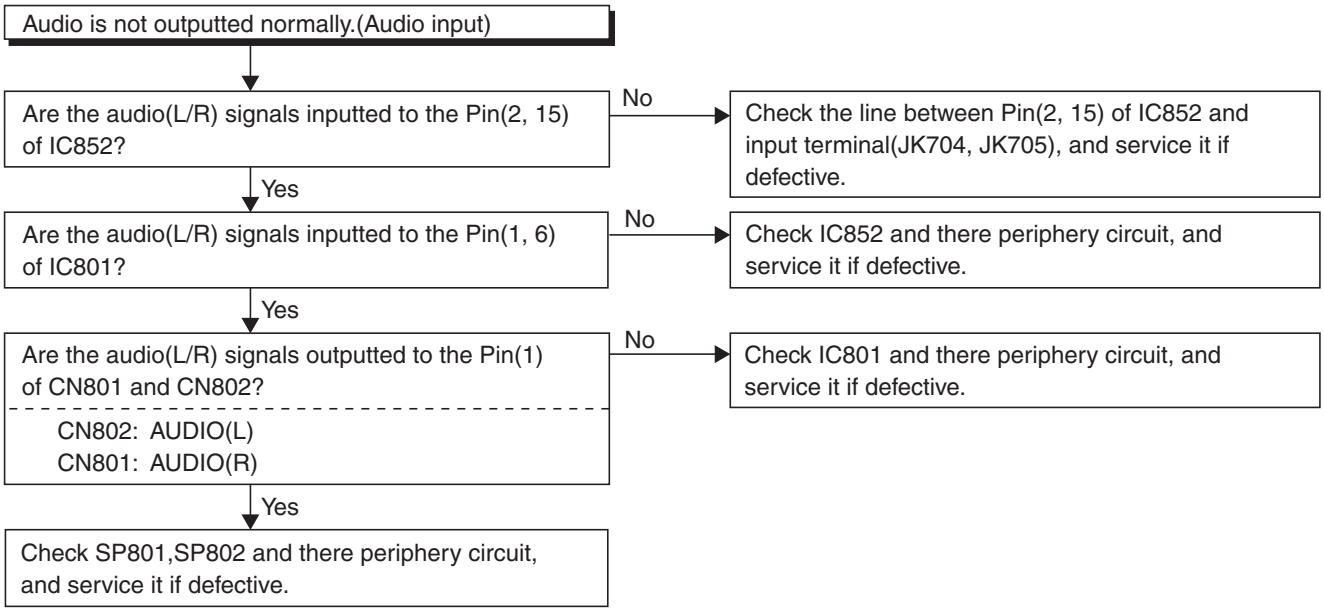
FLOW CHART NO.29


Picture does not appear normally.(DVD PB)
Are the video signal inputted to the Pin(1, 3, 13) of IC854?
Pin(1) : DVD-Y
Pin(3) : DVD-Pb
Pin(13): DVD-Pr
No
Replace DVD Main CBA Unit.
Yes
Are the video signal outputted to the Pin(4, 14, 15) of IC854?
Pin(15): VIDEO-Y
Pin(4) : VIDEO-Pb
Pin(14): VIDEO-Pr
No
Check IC854 and there periphery circuit, and service it if defective.
Yes
Replace Digital Main CBA Unit or LCD Module Assembly.

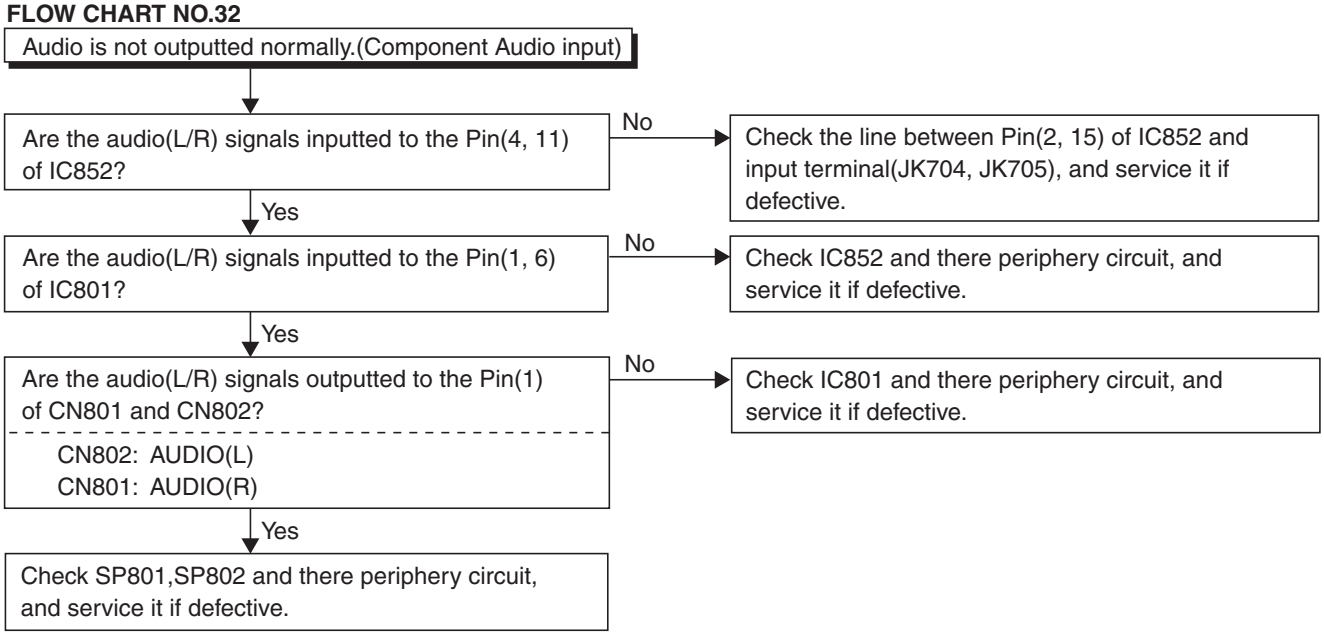
FLOW CHART NO.30


Picture does not appear normally.(Tuner input(Digital))
Are the SIF signal outputted to the Pin(26, 27) of CN61?
No
Check TU61 and there periphery circuit, and service it if defective.
Yes
Are the video signal outputted to the Pin(17, 18, 20) of CN703?
Pin(20): DVD-Y
Pin(18): DVD-Pb
Pin(17): DVD-Pr
No
Replace DTV Module CBA Unit.
Yes
Replace Digital Main CBA Unit or LCD Module Assembly.

FLOW CHART NO.31


Audio is not outputted normally.(Audio input)
Are the audio(L/R) signals inputted to the Pin(2, 15) of IC852?
No
Check the line between Pin(2, 15) of IC852 and input terminal(JK704, JK705), and service it if defective.
Yes
Are the audio(L/R) signals inputted to the Pin(1, 6) of IC801?
No
Check IC852 and there periphery circuit, and service it if defective.
Yes
Are the audio(L/R) signals outputted to the Pin(1) of CN801 and CN802?
CN802: AUDIO(L)
CN801: AUDIO(R)
No
Check IC801 and there periphery circuit, and service it if defective.
Yes
Check SP801,SP802 and there periphery circuit, and service it if defective.

FLOW CHART NO.32


Audio is not outputted normally.(Component Audio input)
Are the audio(L/R) signals inputted to the Pin(4, 11) of IC852?
No
Check the line between Pin(2, 15) of IC852 and input terminal(JK704, JK705), and service it if defective.
Yes
Are the audio(L/R) signals inputted to the Pin(1, 6) of IC801?
No
Check IC852 and there periphery circuit, and service it if defective.
Yes
Are the audio(L/R) signals outputted to the Pin(1) of CN801 and CN802?
CN802: AUDIO(L)
CN801: AUDIO(R)
No
Check IC801 and there periphery circuit, and service it if defective.
Yes
Check SP801,SP802 and there periphery circuit, and service it if defective.

FLOW CHART NO.33

Audio is not outputted normally.(Tuner input(Analog))

↓

Are the SIF signals outputted to the Pin(8) of IC31?

No → Check IC31, TU61 and there periphery circuit, and service it if defective.

↓ Yes

Are the audio(L/R) signals inputted to the Pin(1, 12) of IC852?

No → Check IC851 and there periphery circuit, and service it if defective.

↓ Yes

Are the audio(L/R) signals inputted to the Pin(1, 6) of IC801?

No → Check IC852 and there periphery circuit, and service it if defective.

↓ Yes

Are the audio(L/R) signals outputted to the Pin(1) of CN801 and CN802?

CN802: AUDIO(L)
CN801: AUDIO(R)

No → Check IC801 and there periphery circuit, and service it if defective.

↓ Yes

Check SP801,SP802 and there periphery circuit, and service it if defective.

FLOW CHART NO.34

Audio is not outputted normally.(Tuner input(Digital))

↓

Are the DIF signals outputted to the Pin(26, 27) of CN61?

No → Check TU61 and there periphery circuit, and service it if defective.

↓ Yes

Are the audio(L/R) signals inputted to the Pin(5, 14) of IC852?

No → Replace DTV Module CBA Unit.

↓ Yes

Are the audio(L/R) signals inputted to the Pin(1, 6) of IC801?

No → Check IC852 and there periphery circuit, and service it if defective.

↓ Yes

Are the audio(L/R) signals outputted to the Pin(1) of CN801 and CN802?

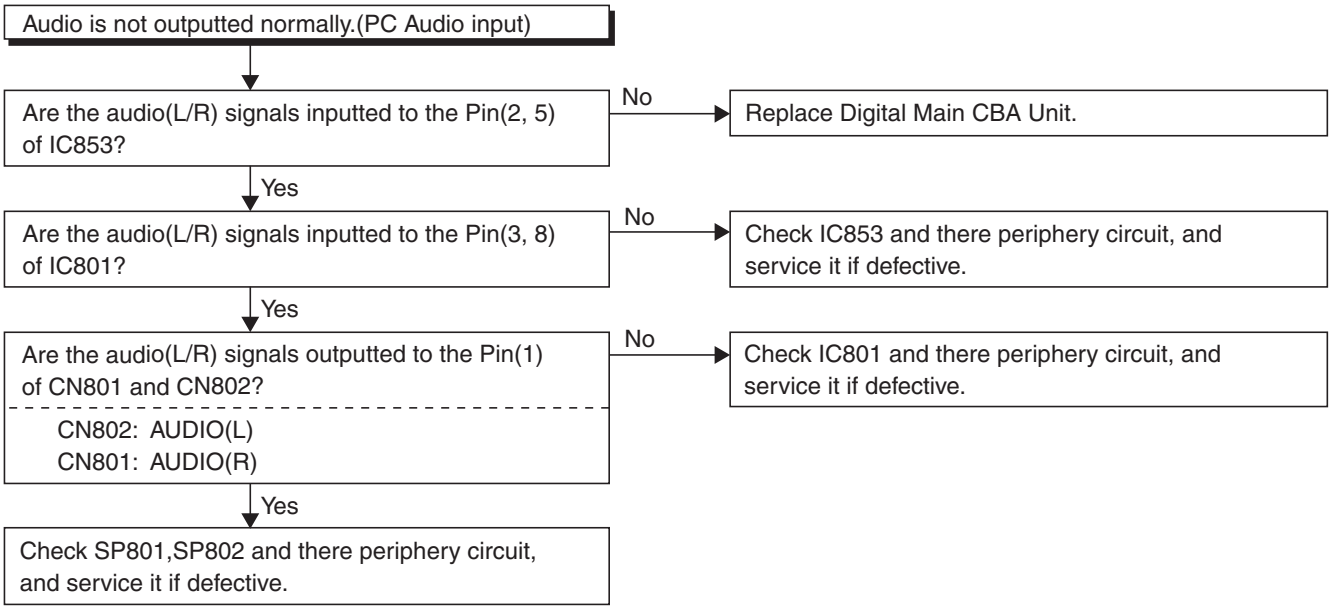
CN802: AUDIO(L)
CN801: AUDIO(R)

No → Check IC801 and there periphery circuit, and service it if defective.

↓ Yes

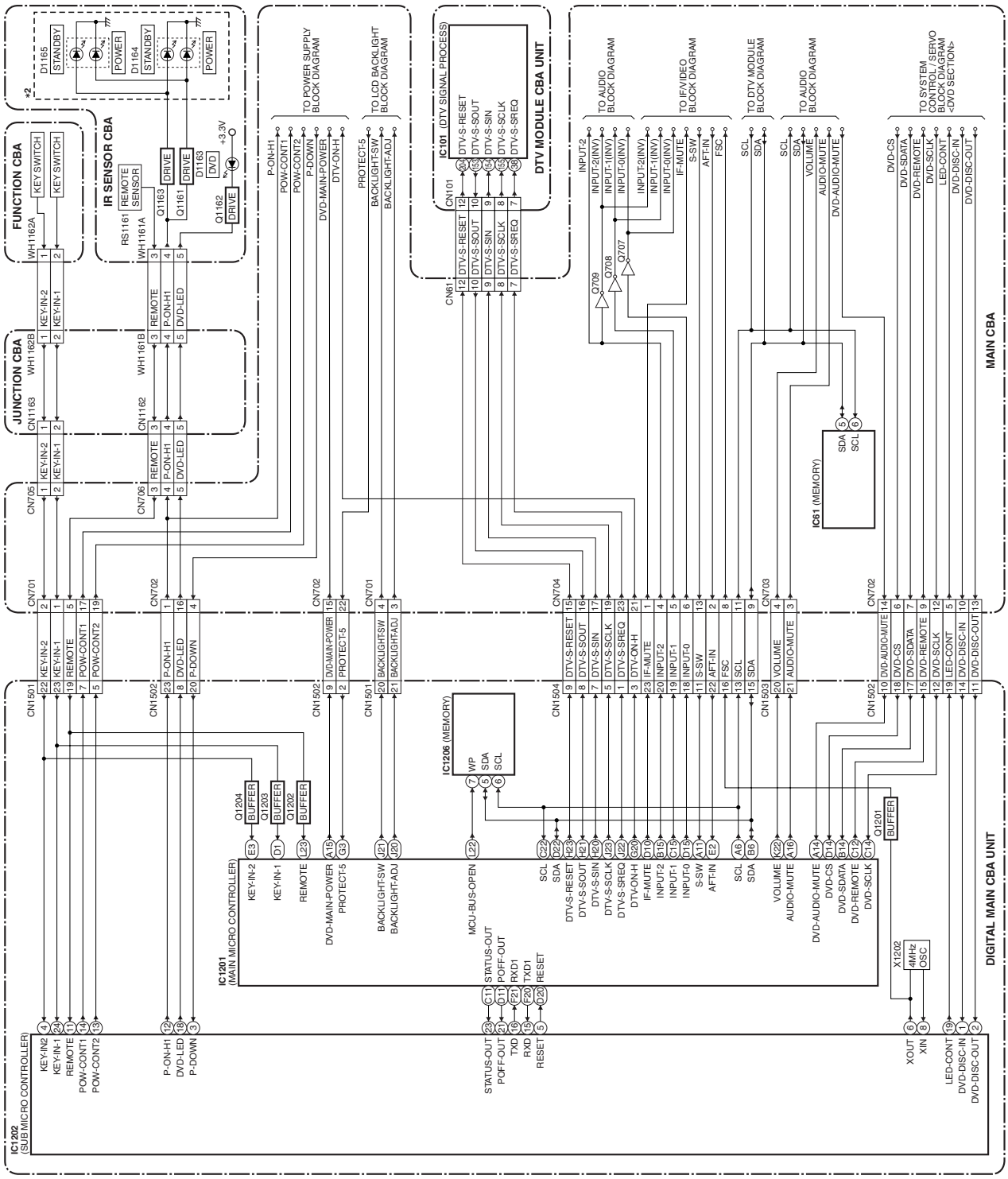
Check SP801,SP802 and there periphery circuit, and service it if defective.

FLOW CHART NO.35


Audio is not outputted normally.(PC Audio input)
Are the audio(L/R) signals inputted to the Pin(2, 5) of IC853?
No
Replace Digital Main CBA Unit.
Yes
Are the audio(L/R) signals inputted to the Pin(3, 8) of IC801?
No
Check IC853 and there periphery circuit, and service it if defective.
Yes
Are the audio(L/R) signals outputted to the Pin(1) of CN801 and CN802?
CN802: AUDIO(L)
CN801: AUDIO(R)
No
Check IC801 and there periphery circuit, and service it if defective.
Yes
Check SP801,SP802 and there periphery circuit, and service it if defective.

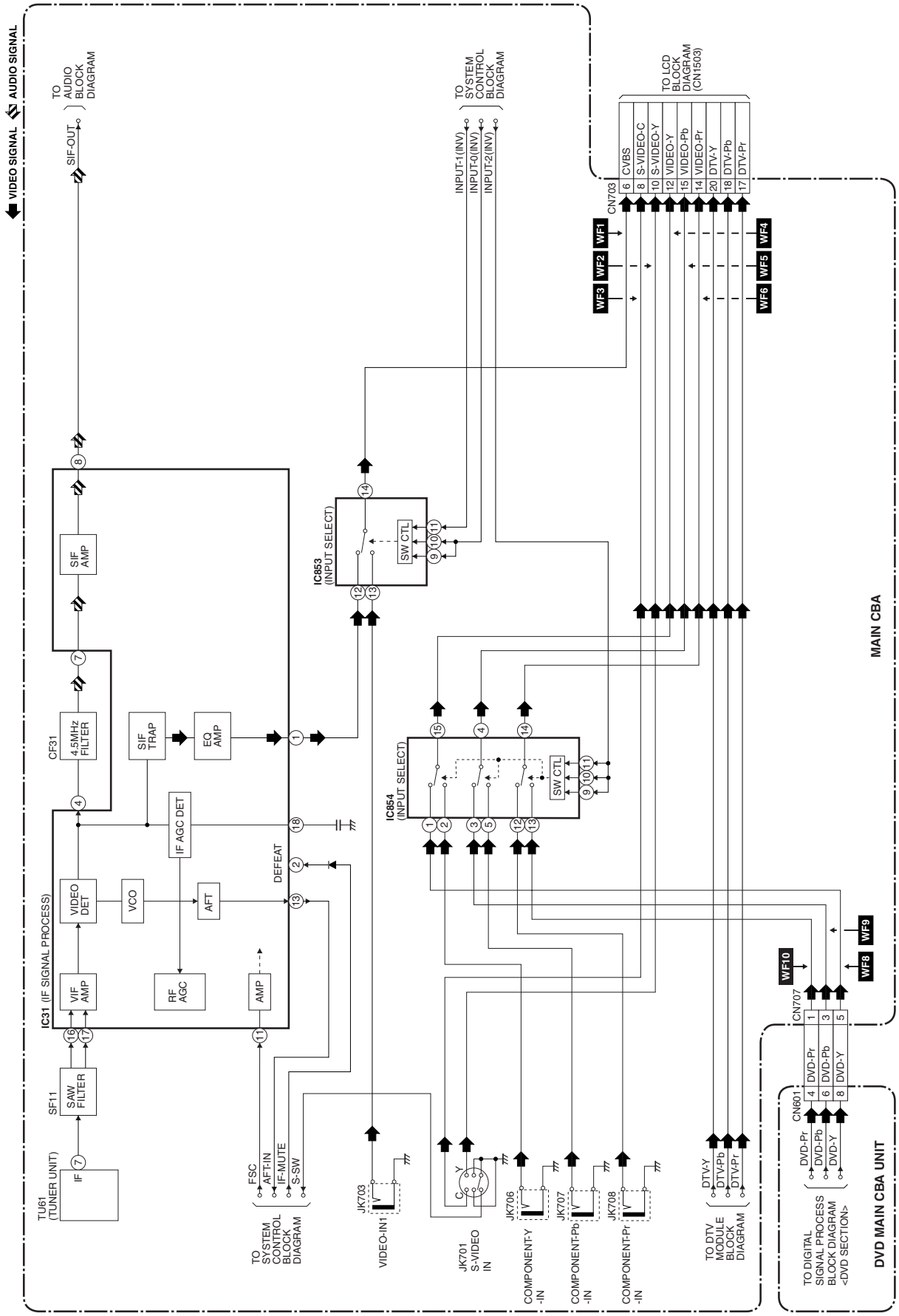
BLOCK DIAGRAMS < LCD TV Section >

System Control Block Diagram

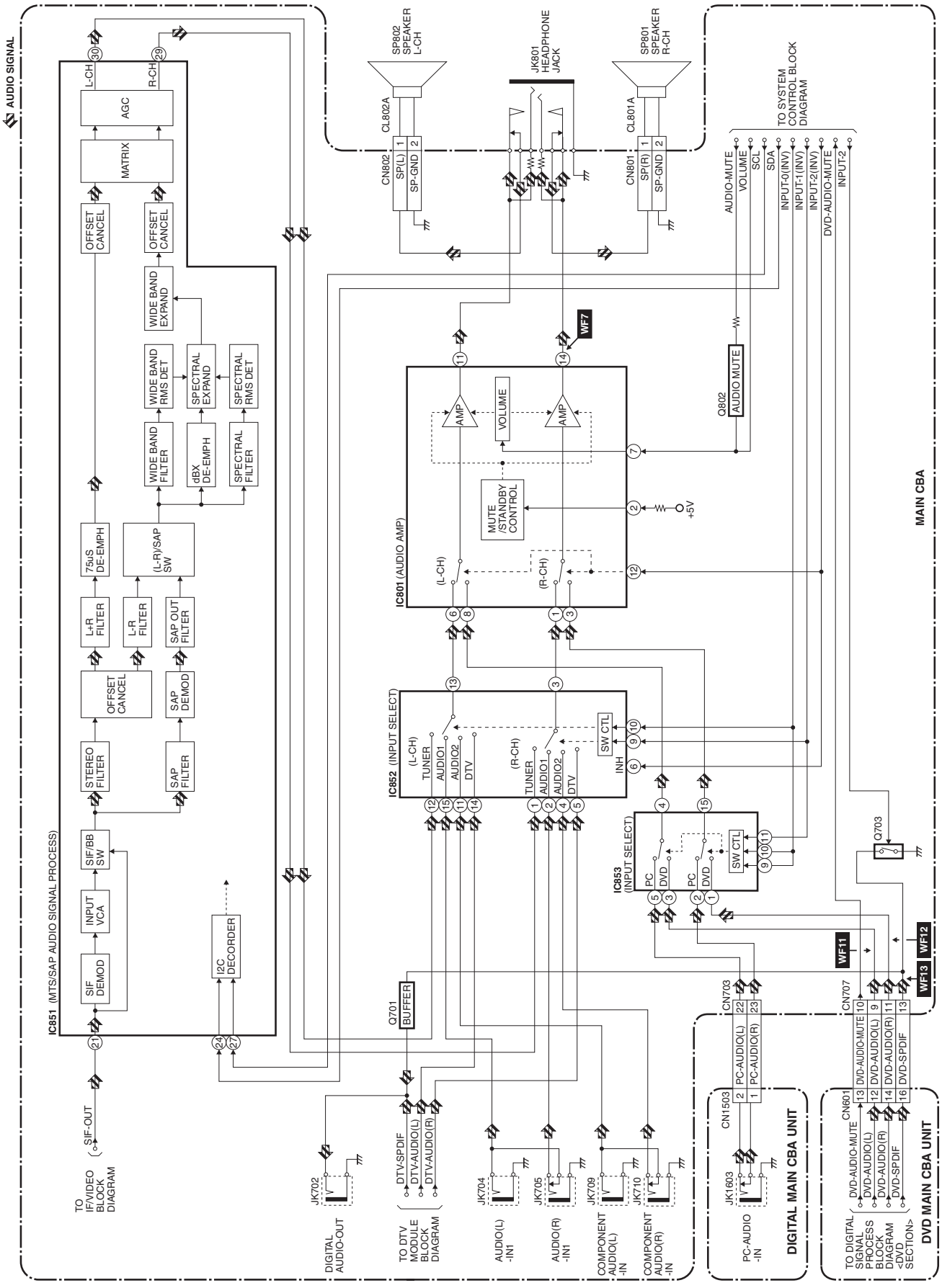


∗2 **NOTE:**
Either D1164 or D1165 is used for IR SENSOR CBA.

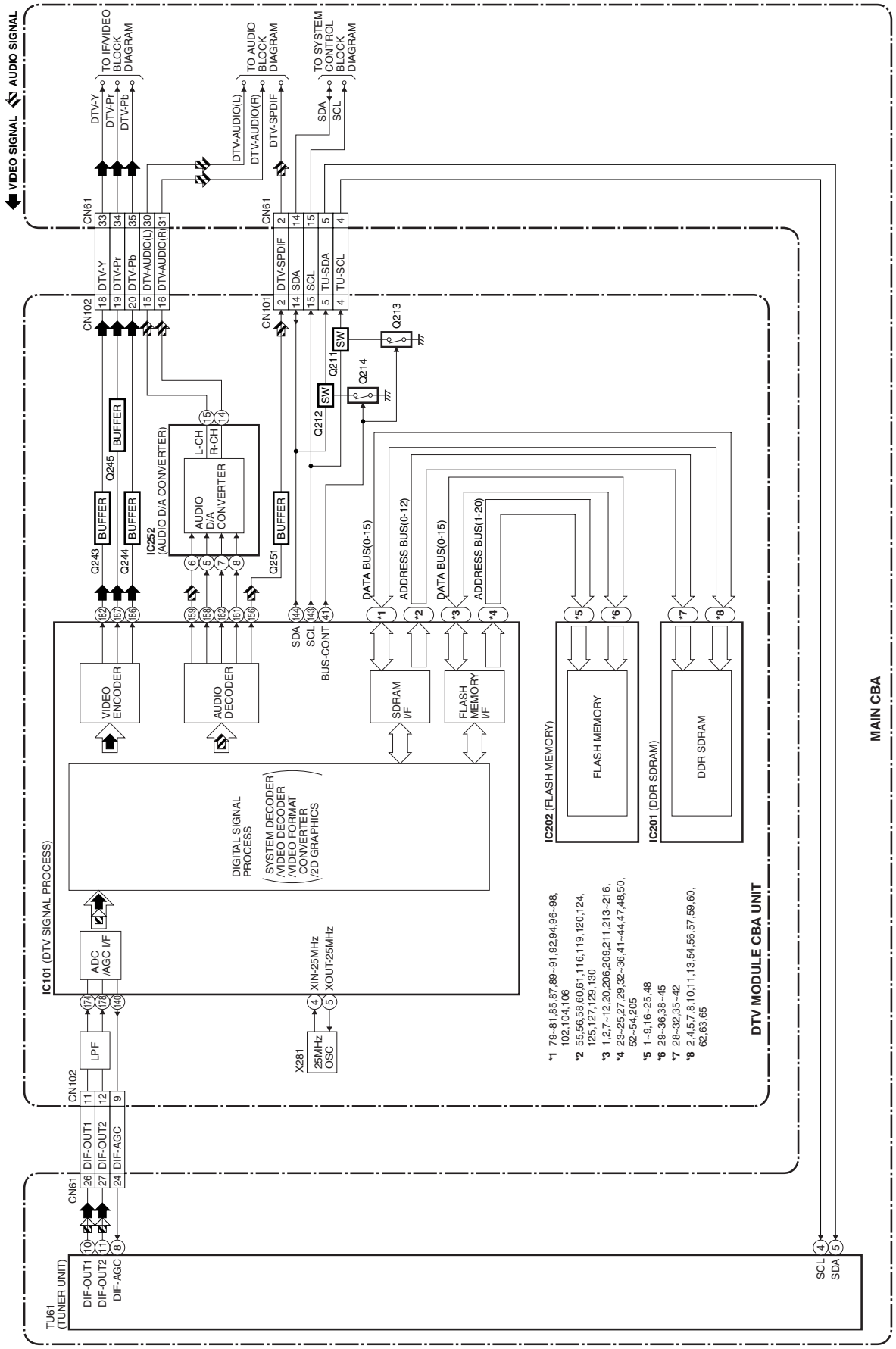
IF/Video Block Diagram



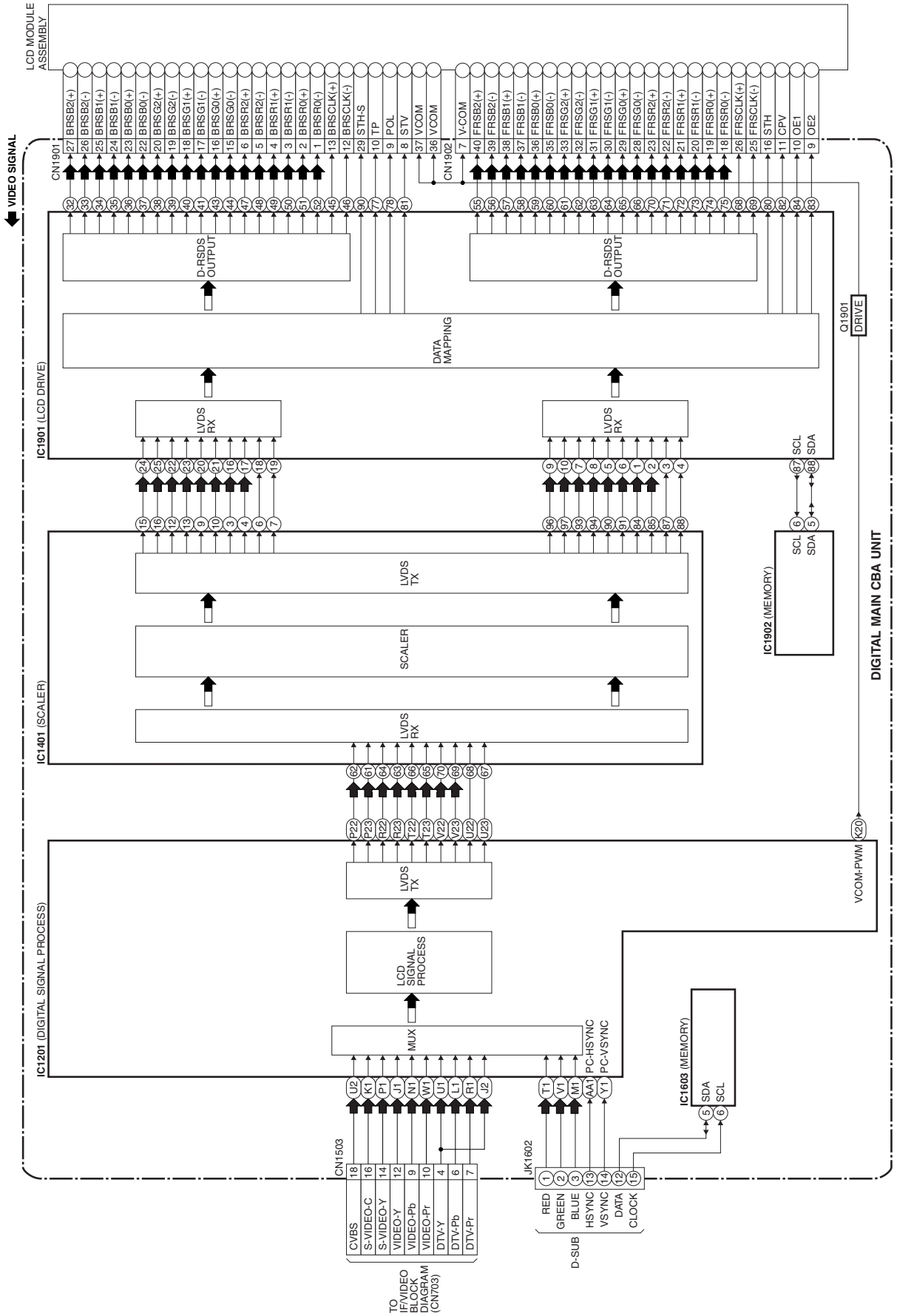
Audio Block Diagram



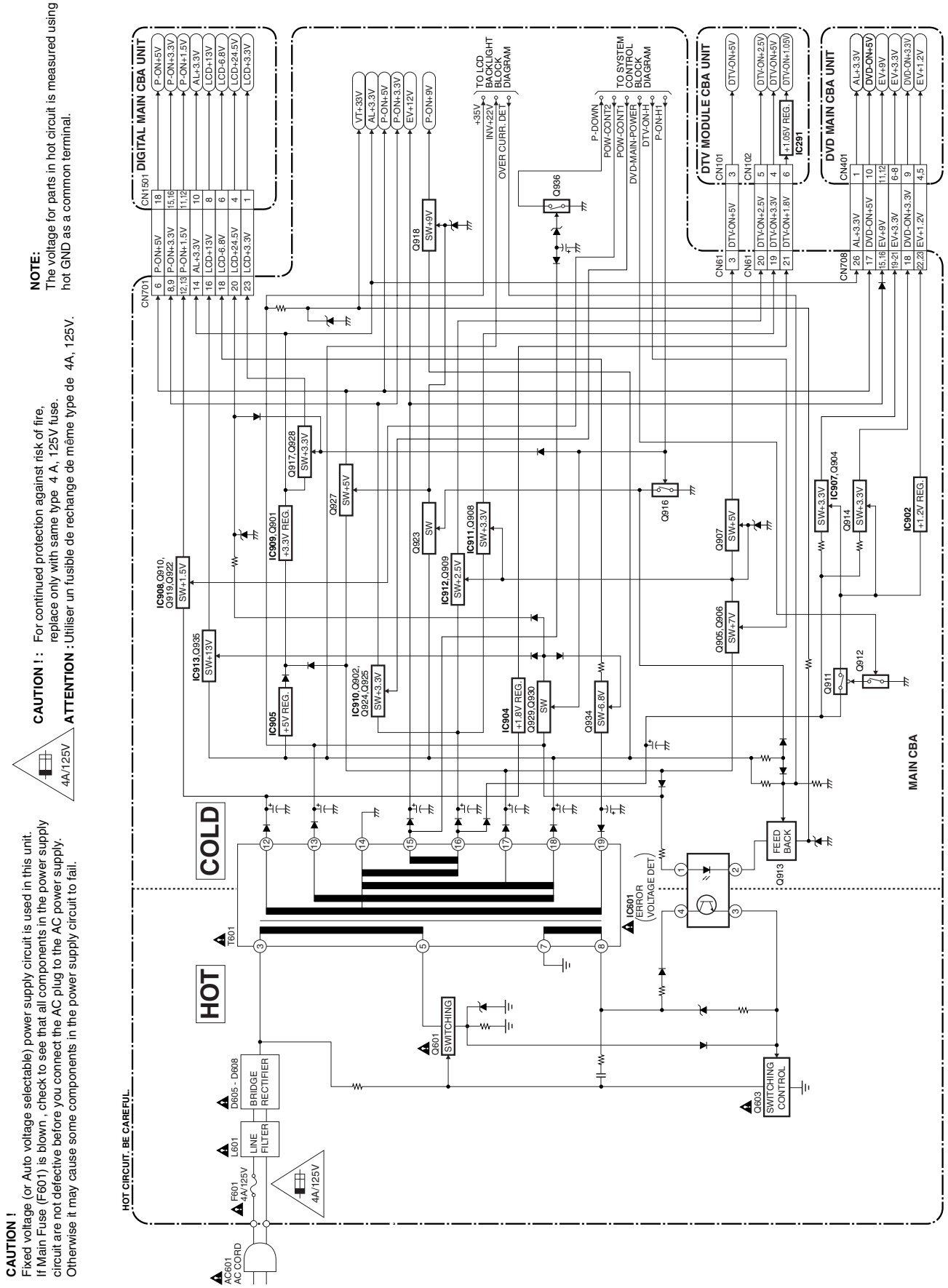
DTV Module Block Diagram



LCD Block Diagram



Power Supply Block Diagram

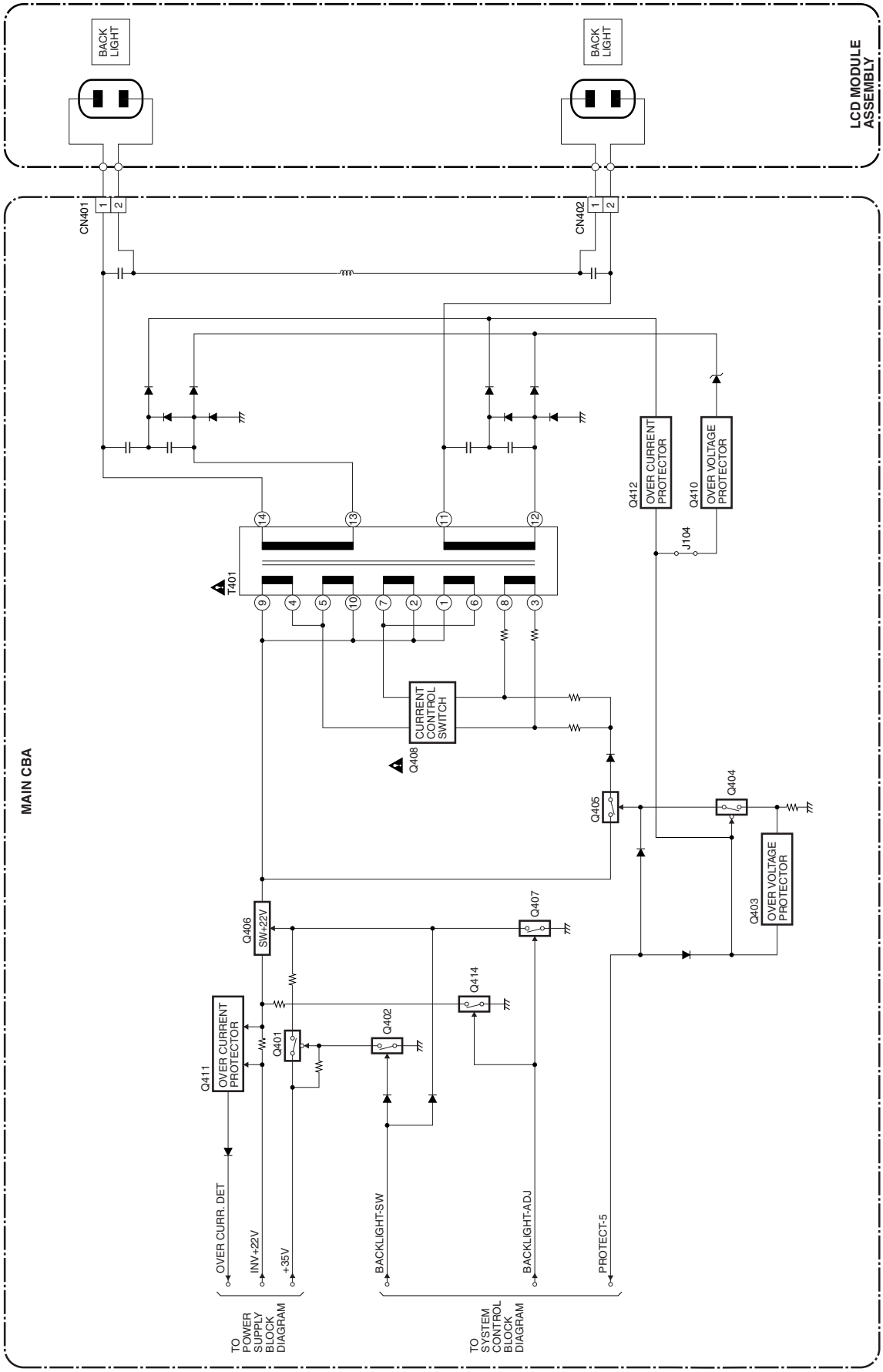


CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

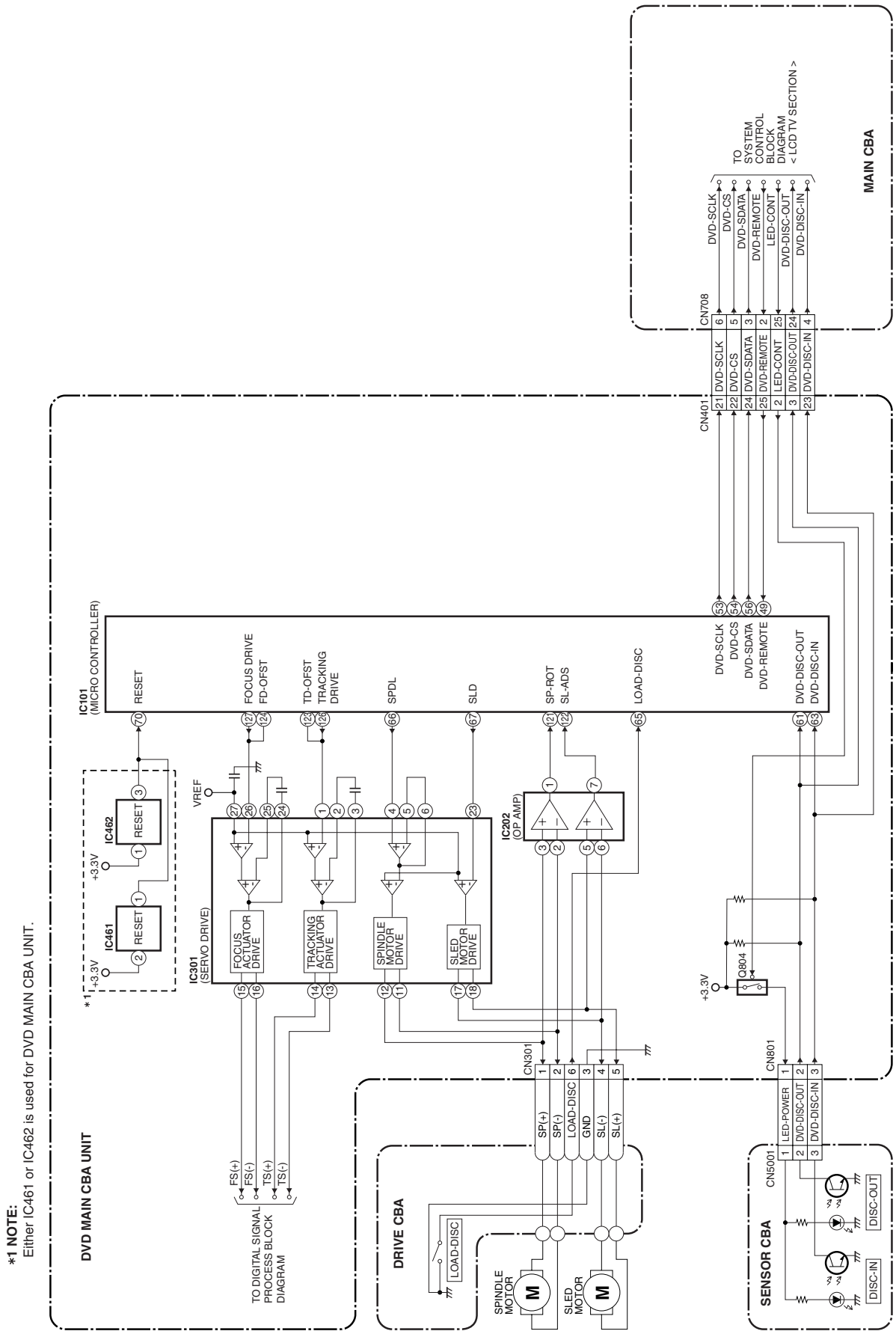
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

LCD Backlight Block Diagram



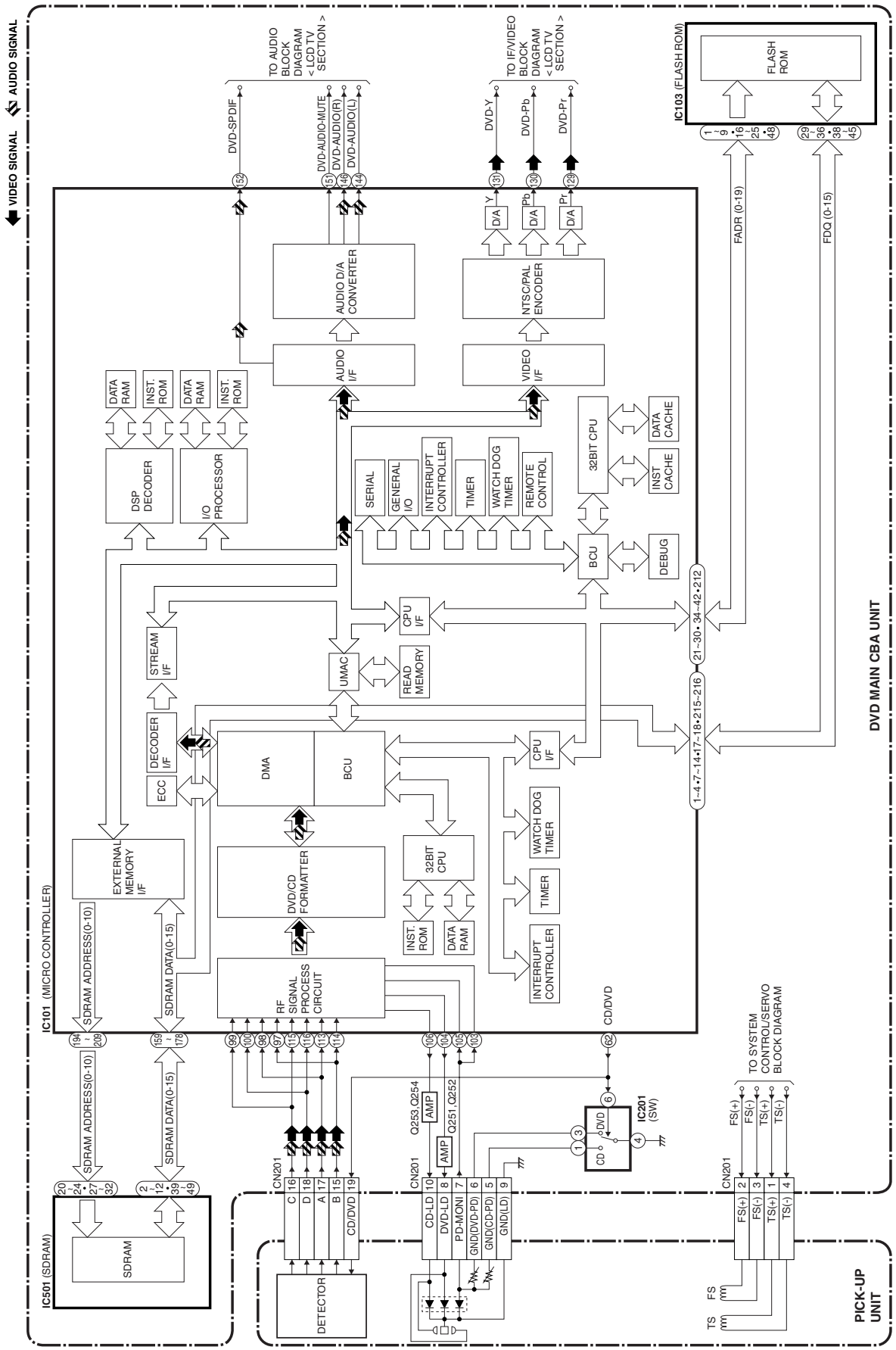
BLOCK DIAGRAMS < DVD Section >

System Control / Servo Block Diagram



***1 NOTE:**
Either IC461 or IC462 is used for DVD MAIN CBA UNIT.

Digital Signal Process Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K = 10^3$, $M = 10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P = 10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE_A,_V FUSE.

ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE_A,_V.

2. CAUTION:

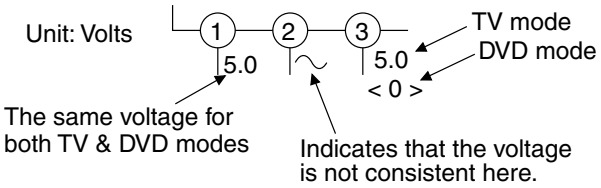
Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

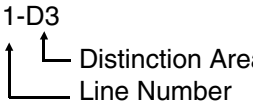
1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Voltage indications on the schematics are as shown below:

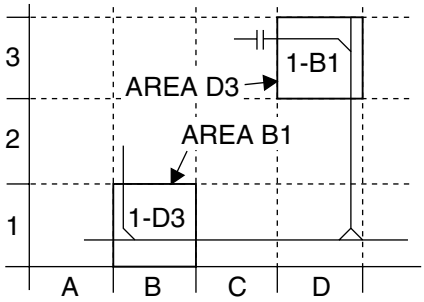
Unit: Volts



5. How to read converged lines



Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



6. Test Point Information

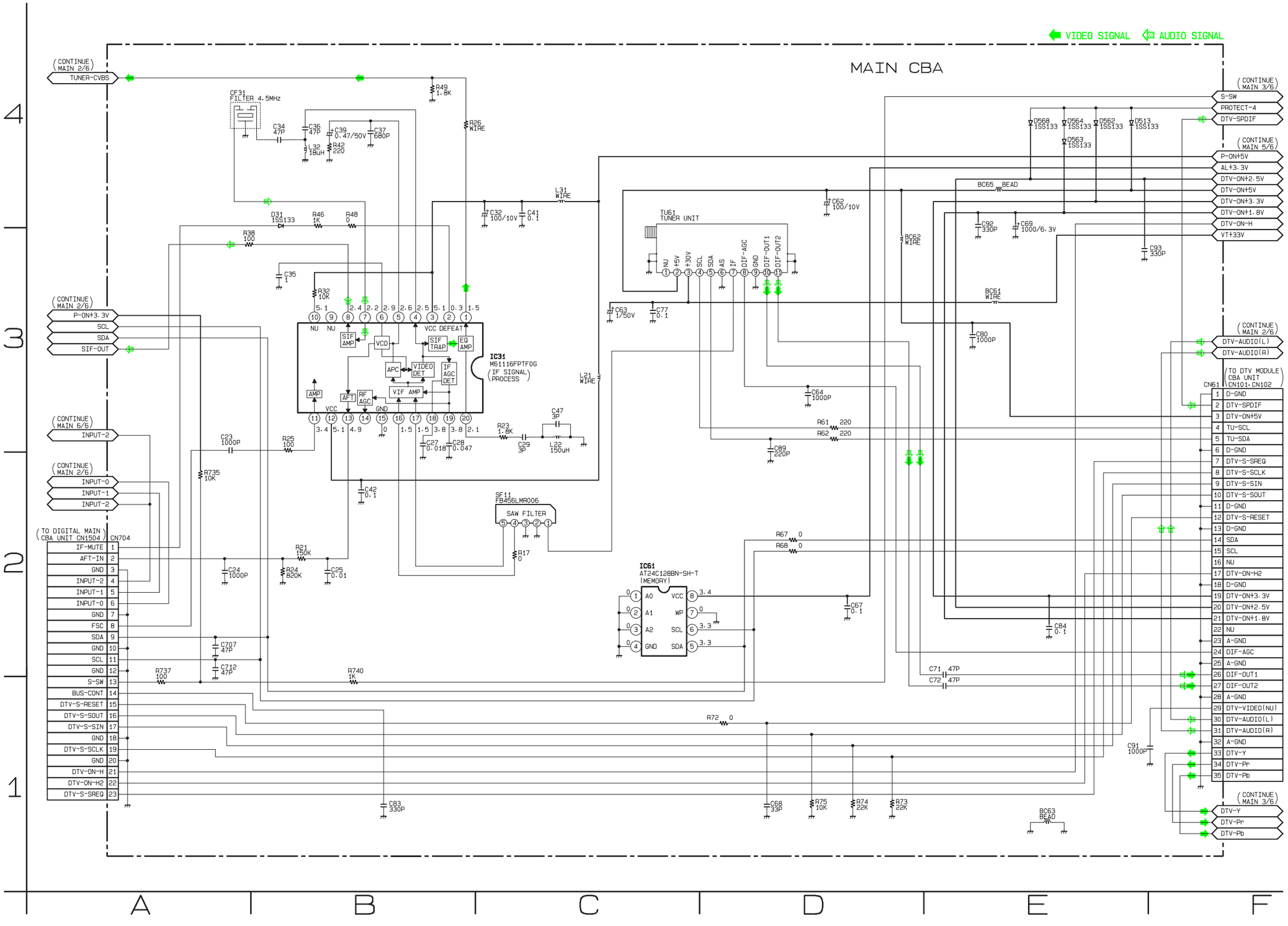
: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

MAIN 1/6 Schematic Diagram < LCD TV Section >



VOLTAGE CHART

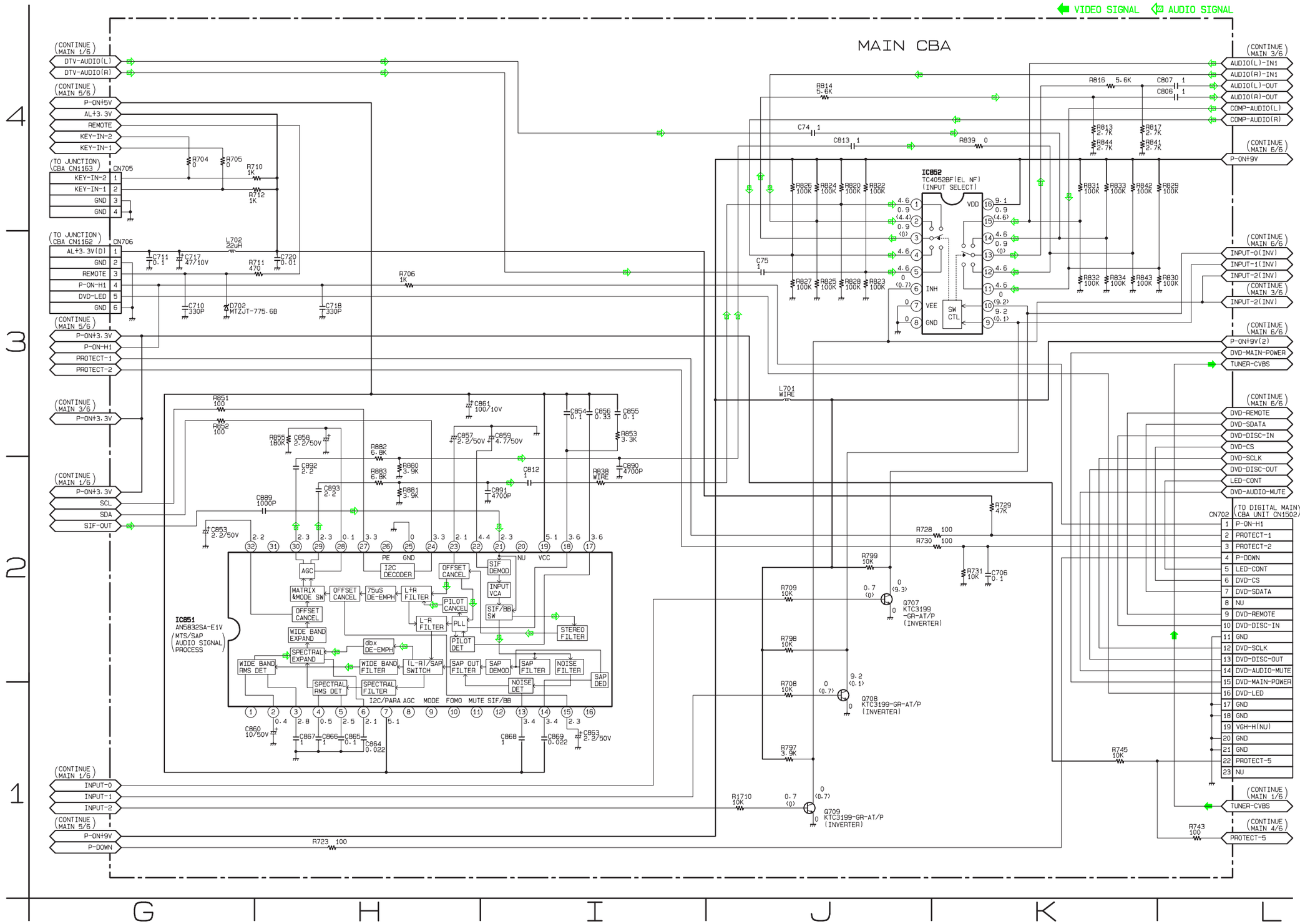
CN61

Pin No.	Voltage
1	0
2	1.0
3	5.0
4	3.3
5	3.3
6	0
7	2.8
8	3.2
9	1.5
10	0.2
11	0
12	3.3
13	0
14	3.3
15	3.3
16	---
17	3.2
18	0
19	3.4
20	2.6
21	1.9
22	---
23	0
24	0
25	0
26	~
27	~
28	0
29	0.3
30	2.5
31	2.5
32	0
33	~
34	~
35	~

CN704

Pin No.	Voltage
1	3.3
2	2.1
3	0
4	3.3
5	0
6	3.3
7	0
8	1.0
9	3.3
10	0
11	3.3
12	0
13	3.3
14	0
15	3.3
16	0.2
17	1.5
18	0
19	3.2
20	0
21	3.3
22	3.2
23	2.8

MAIN 2/6 Schematic Diagram < LCD TV Section >

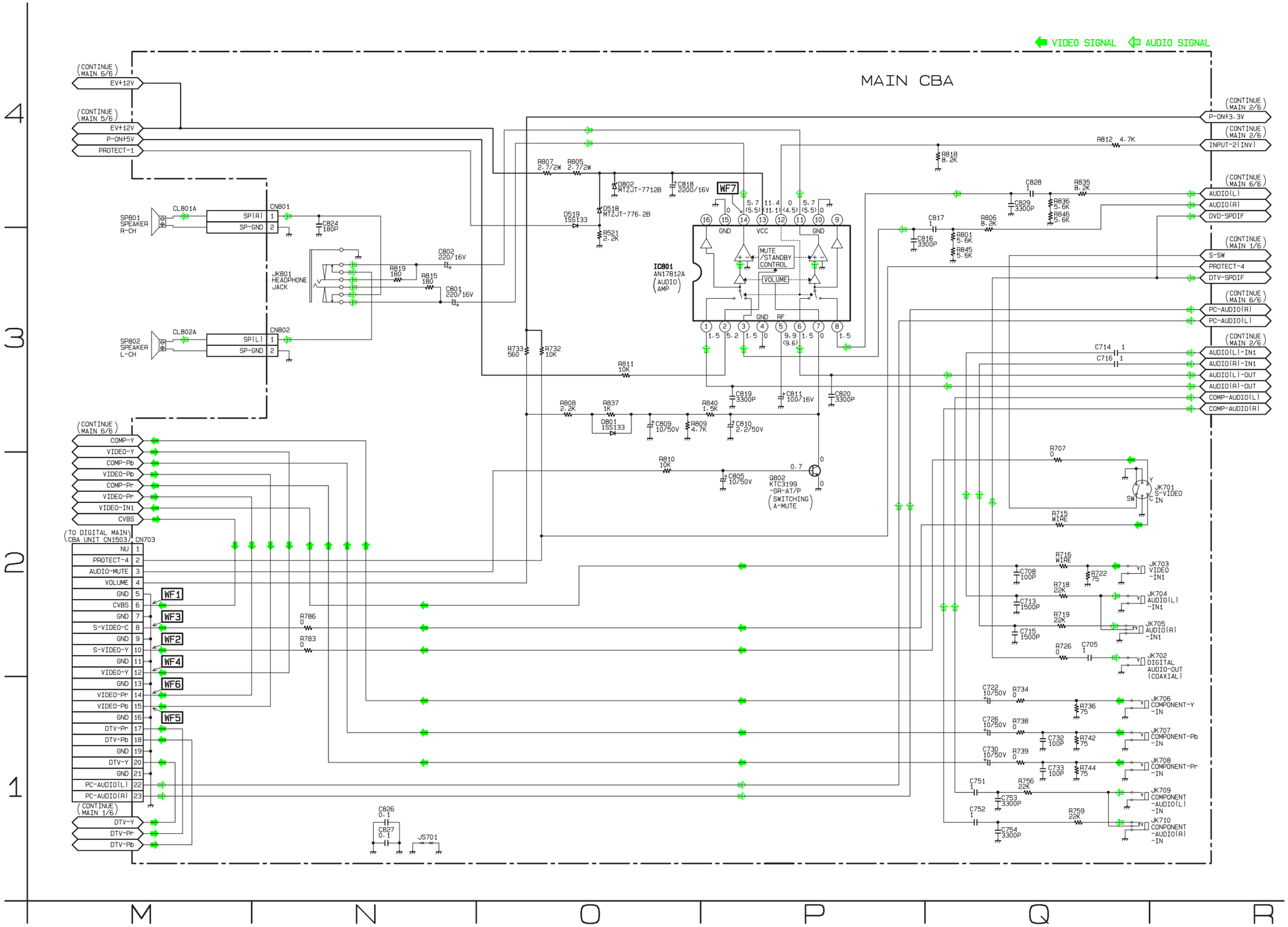


VOLTAGE CHART

CN702

Pin No.	Voltage
1	3.1
2	2.4
3	1.8
4	3.3
5	3.4
6	2.5
7	2.4
8	---
9	3.4
10	3.4
11	0
12	2.5
13	3.4
14	3.4
15	0.8
16	0.8
17	0
18	0
19	---
20	0
21	0
22	3.3
23	---

MAIN 3/6 Schematic Diagram < LCD TV Section >

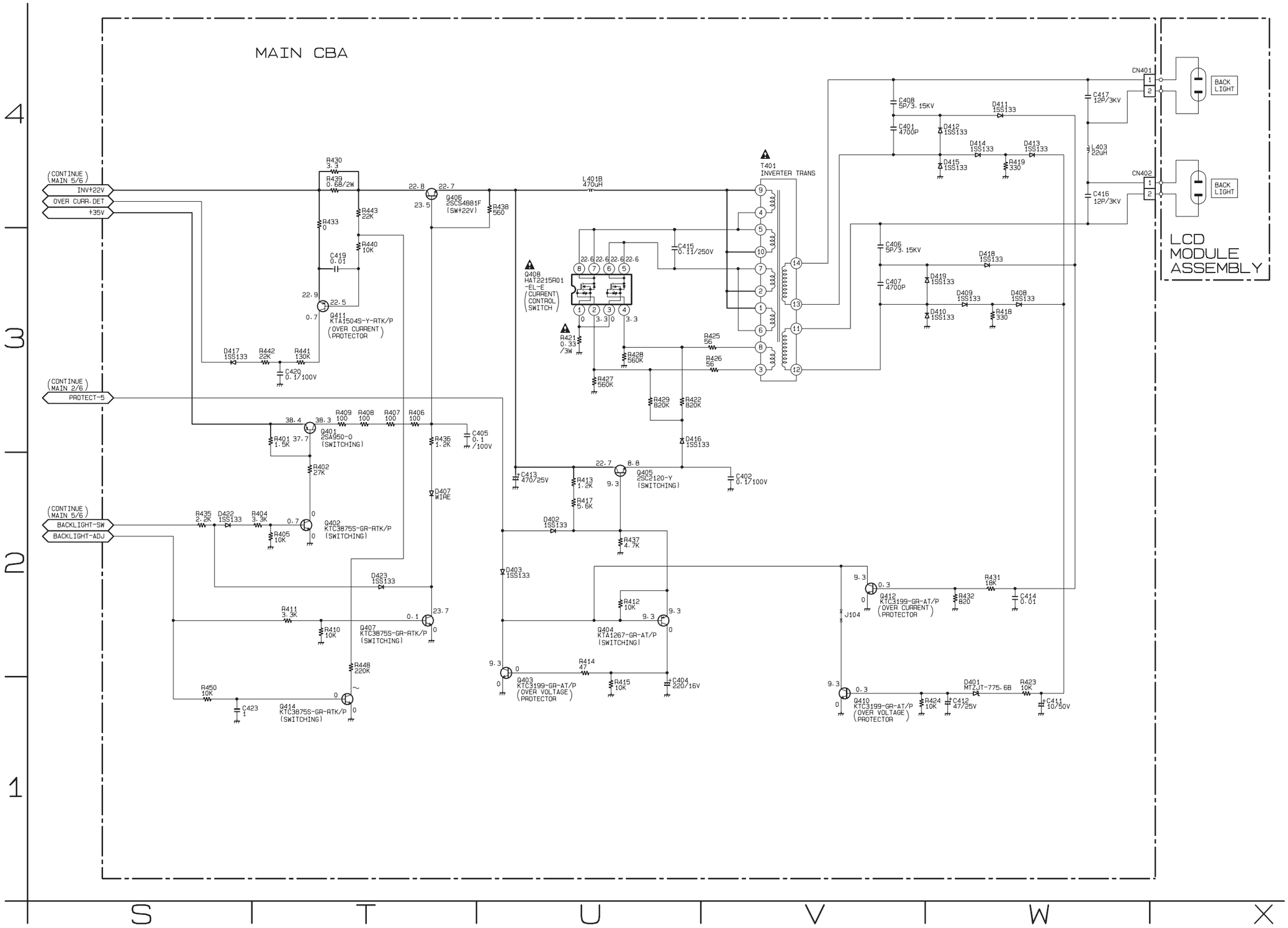


VOLTAGE CHART

CN703

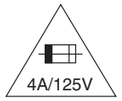
Pin No.	Voltage
1	---
2	2.2
3	0
4	0.7
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	~
18	~
19	0
20	~
21	0
22	0
23	0

MAIN 4/6 Schematic Diagram < LCD TV Section >



MAIN 5/6 Schematic Diagram < LCD TV Section >

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.



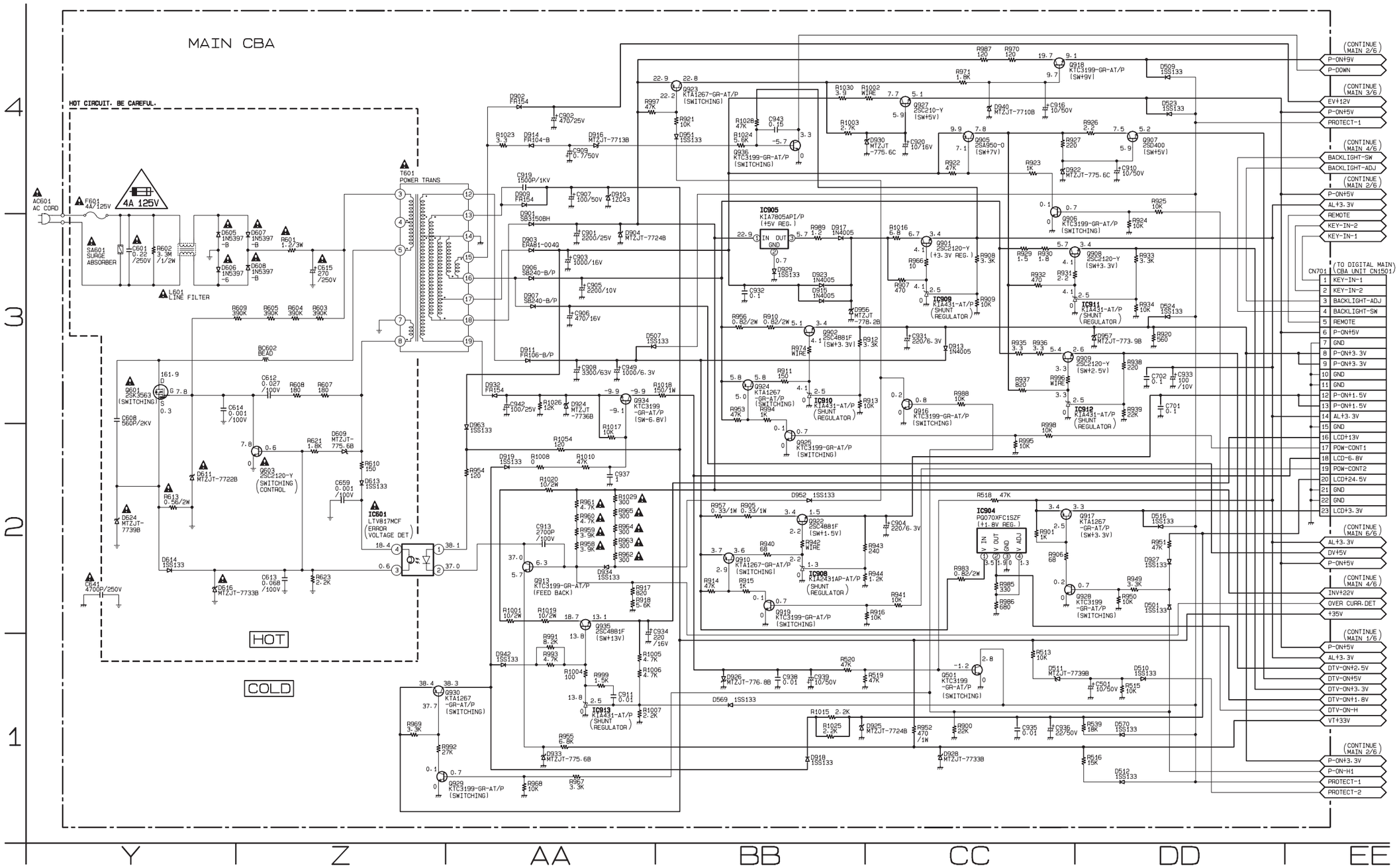
CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

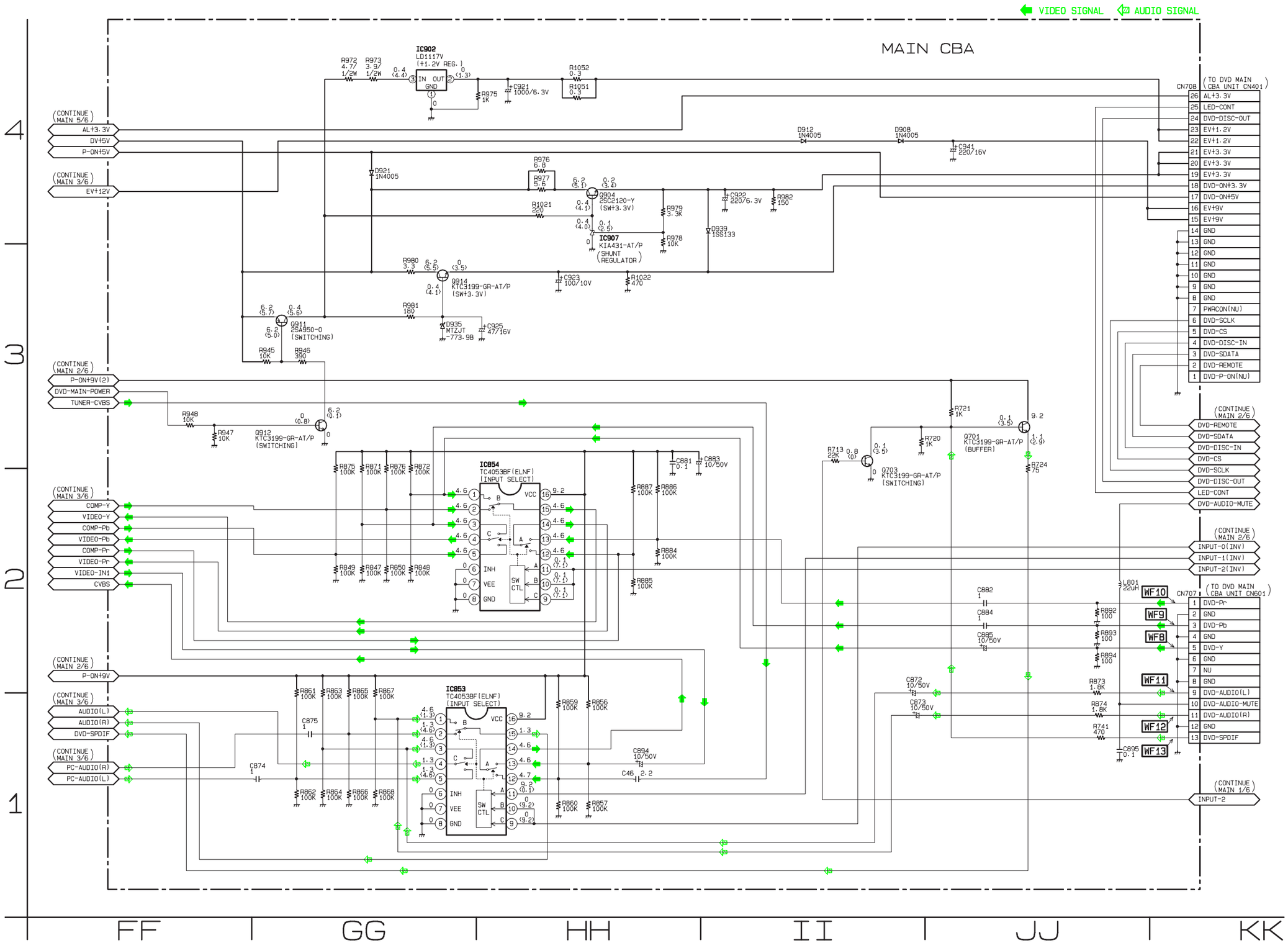
VOLTAGE CHART

CN701

Pin No.	Voltage
1	3.4
2	3.4
3	0.4
4	3.3
5	2.1
6	5.1
7	0
8	3.4
9	3.4
10	0
11	0
12	1.5
13	1.5
14	3.4
15	0
16	13.1
17	3.3
18	-7.0
19	3.3
20	24.4
21	0
22	0
23	3.3



MAIN 6/6 Schematic Diagram < LCD TV Section >



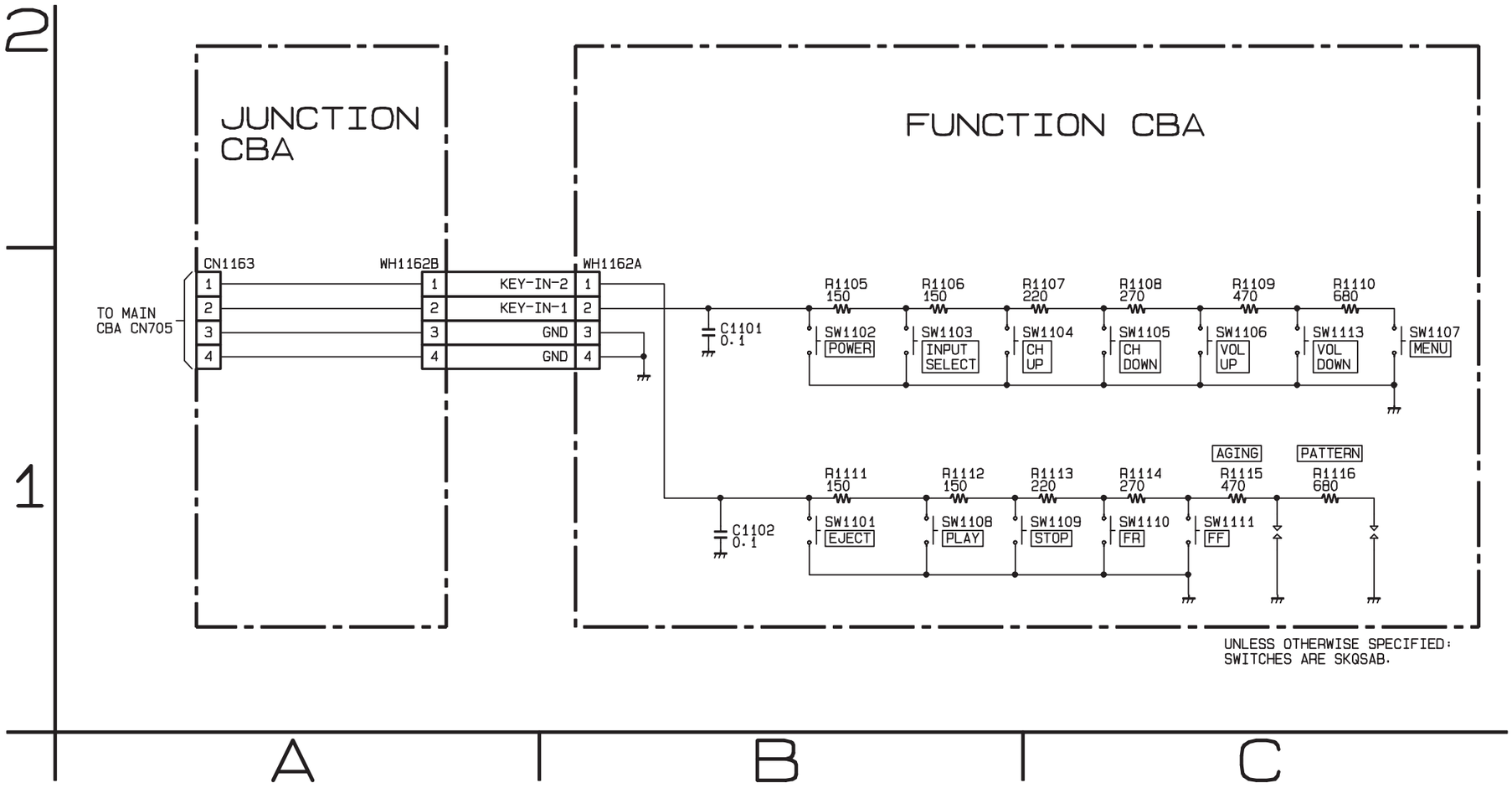
VOLTAGE CHART

CN707

Pin No.	Voltage
1	0.9
2	0
3	0.9
4	0
5	0.7
6	0
7	---
8	0
9	1.6
10	3.4
11	1.6
12	0
13	3.5

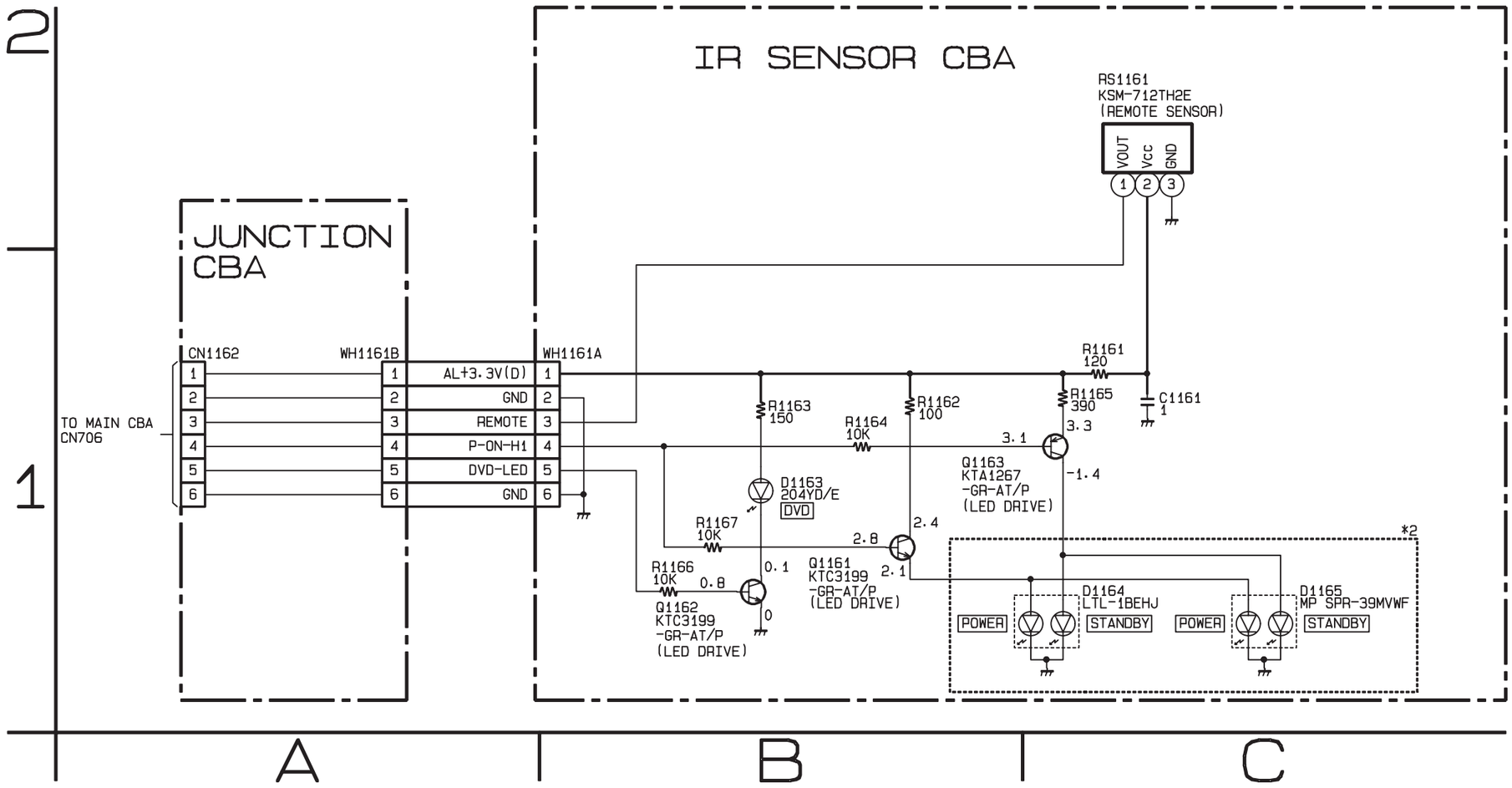
CN708

Pin No.	Voltage
1	---
2	3.4
3	2.4
4	3.4
5	2.5
6	2.5
7	---
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	9.9
16	9.9
17	5.2
18	3.5
19	3.4
20	3.4
21	3.4
22	1.3
23	1.3
24	3.4
25	3.4
26	3.4

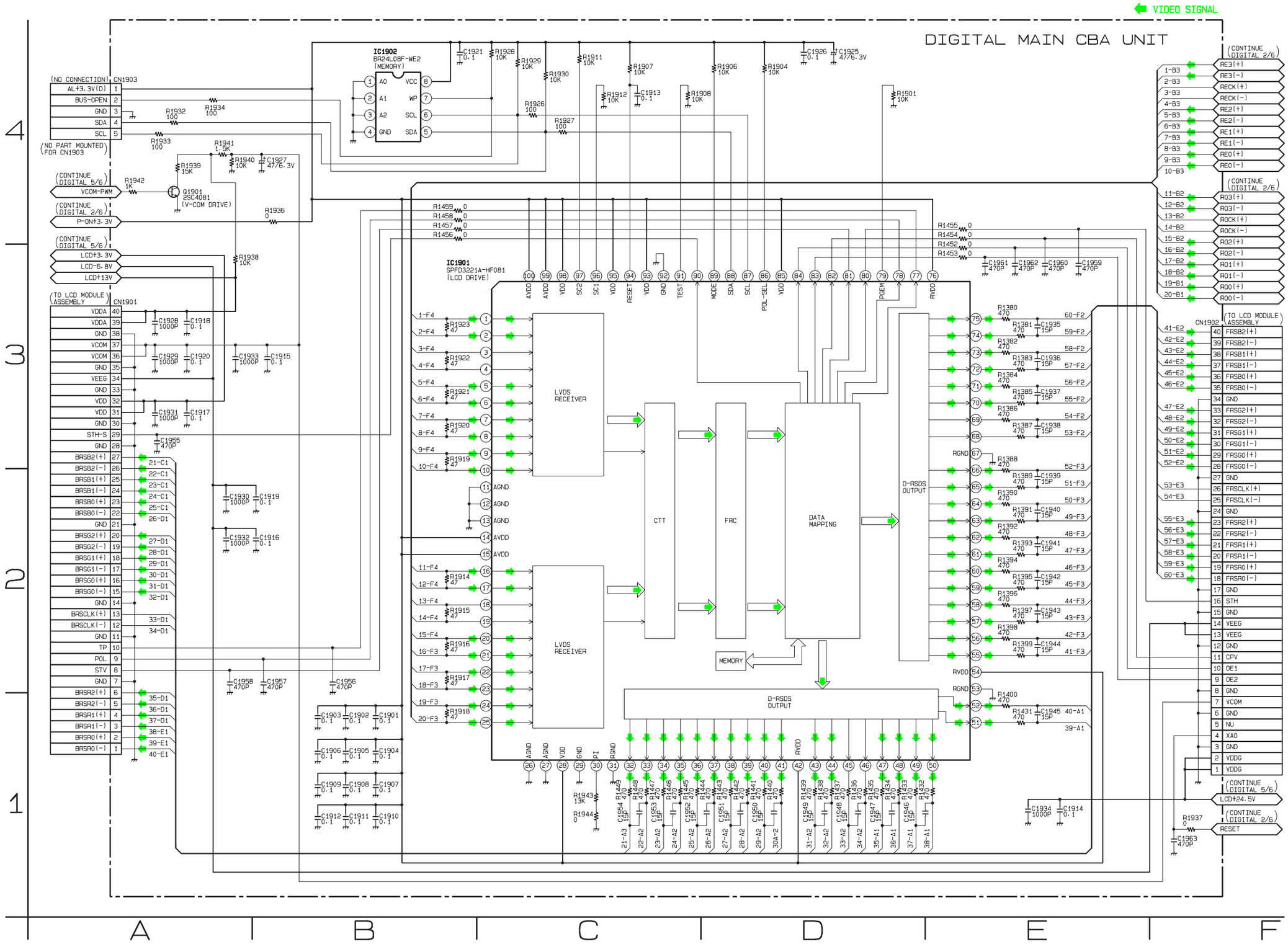

JUNCTION CBA
FUNCTION CBA
CN1163
WH1162B
WH1162A
TO MAIN CBA CN705
1 KEY-IN-2
2 KEY-IN-1
3 GND
4 GND
C1101 0.1
C1102 0.1
R1105 150
R1106 150
R1107 220
R1108 270
R1109 470
R1110 680
R1111 150
R1112 150
R1113 220
R1114 270
R1115 470
R1116 680
SW1101 EJECT
SW1102 POWER
SW1103 INPUT SELECT
SW1104 CH UP
SW1105 CH DOWN
SW1106 VOL UP
SW1107 MENU
SW1108 PLAY
SW1109 STOP
SW1110 FR
SW1111 FF
SW1113 VOL DOWN
AGING
PATTERN
UNLESS OTHERWISE SPECIFIED:
SWITCHES ARE SKQSAB.
A
B
C
1
2

IR Sensor & Junction Schematic Diagram < LCD TV Section >

∗2 **NOTE:**
Either D1164 or D1165 is used for IR SENSOR CBA.

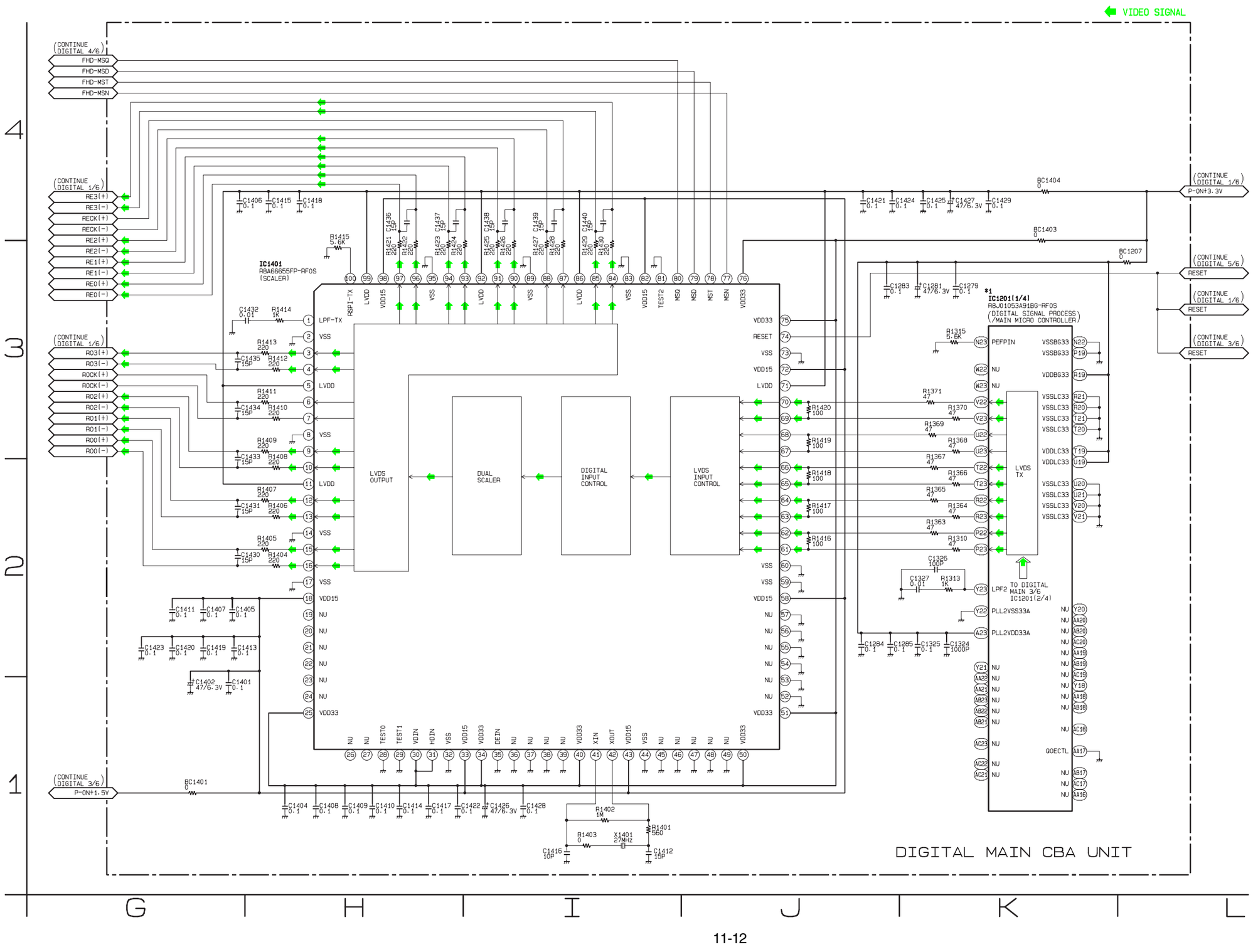


Digital Main 1/6 Schematic Diagram < LCD TV Section >


VIDEO SIGNAL
DIGITAL MAIN CBA UNIT
IC1902
BR24L08F-WE2
(MEMORY)
IC1901
SPFD3221A-HF081
(LCD DRIVE)
LVDS RECEIVER
LVDS RECEIVER
CTT
FRC
DATA MAPPING
D-RSDS OUTPUT
D-RSDS OUTPUT
MEMORY
CN1903
CN1901
CN1902
(NO CONNECTION)
AL+3.3V(D)
BUS-OPEN
GND
SDA
SCL
(NO PART MOUNTED) (FOR CN1903)
(CONTINUE DIGITAL 5/6) VCOM-PWM
(CONTINUE DIGITAL 2/6) P-ON+3.3V
(CONTINUE DIGITAL 5/6) LCD+3.3V
LCD-6.8V
LCD+13V
(TO LCD MODULE ASSEMBLY)
Q1901 2SC4081 (V-COM DRIVE)
(CONTINUE DIGITAL 2/6) RE3(+) RE3(-) RECK(+) RECK(-) RE2(+) RE2(-) RE1(+) RE1(-) RE0(+) RE0(-)
(CONTINUE DIGITAL 2/6) RO3(+) RO3(-) ROCK(+) ROCK(-) RO2(+) RO2(-) RO1(+) RO1(-) RO0(+) RO0(-)
(TO LCD MODULE ASSEMBLY) FRSB2(+) FRSB2(-) FRSB1(+) FRSB1(-) FRSB0(+) FRSB0(-) GND FRSG2(+) FRSG2(-) FRSG1(+) FRSG1(-) FRSG0(+) FRSG0(-) GND FRSCLK(+) FRSCLK(-) GND FRSR2(+) FRSR2(-) FRSR1(+) FRSR1(-) FRSR0(+) FRSR0(-) GND STH GND VEEG VEEG GND CPV OE1 OE2 GND VCOM GND NU XAO GND VDDG VDDG
(CONTINUE DIGITAL 5/6) LCD+24.5V
(CONTINUE DIGITAL 2/6) RESET
BRSA2(+) BRSA2(-) BRSA1(+) BRSA1(-) BRSA0(+) BRSA0(-) GND BRSG2(+) BRSG2(-) BRSG1(+) BRSG1(-) BRSG0(+) BRSG0(-) GND BRSCLK(+) BRSCLK(-) GND TP POL STV GND BRSR2(+) BRSR2(-) BRSR1(+) BRSR1(-) BRSR0(+) BRSR0(-)
AVDD AVDD VDD SCL2 SCL1 VDD RESET VDD GND TEST MODE SDA SCL POL-SEL VDD PGEM AVDD
AGND AGND VDD GND PI RGND RVDD RGND

Digital Main 2/6 Schematic Diagram < LCD TV Section >

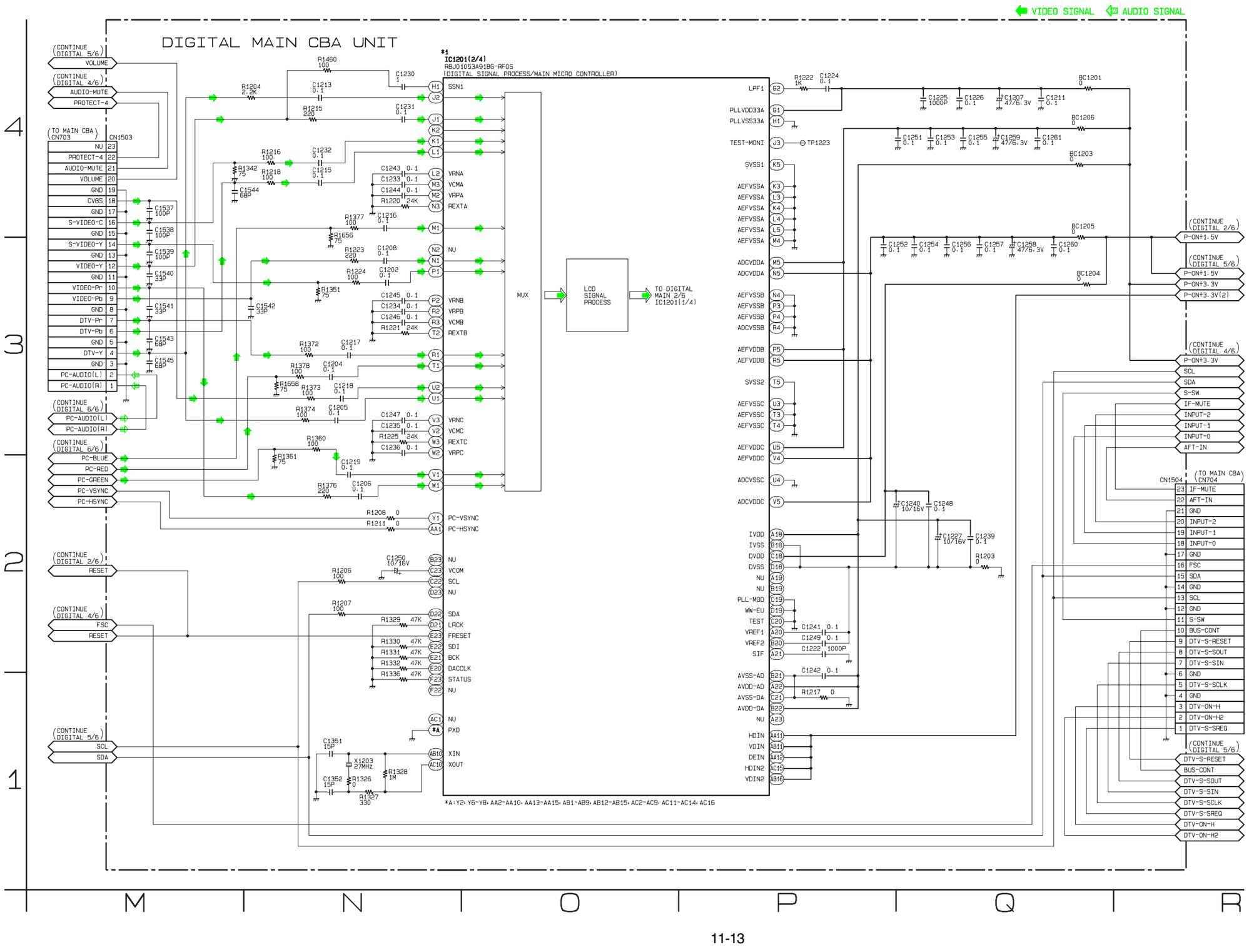
∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC1201.
IC1201 is divided into four and shown as IC1201 (1/4) ~ IC1201 (4/4) in this Digital Main Schematic Diagram Section.



A84N1SCD2

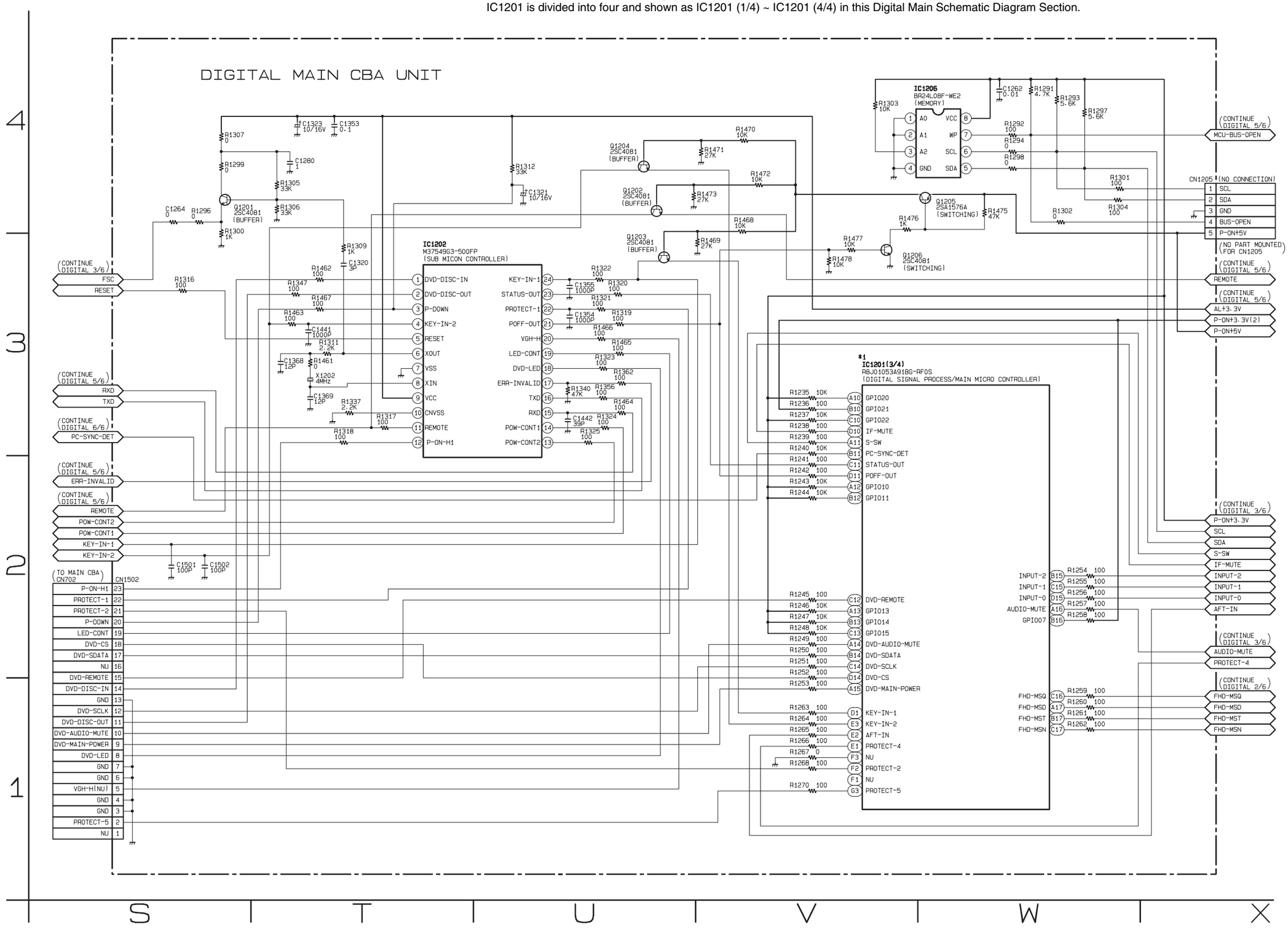
Digital Main 3/6 Schematic Diagram < LCD TV Section >

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC1201.
IC1201 is divided into four and shown as IC1201 (1/4) ~ IC1201 (4/4) in this Digital Main Schematic Diagram Section.



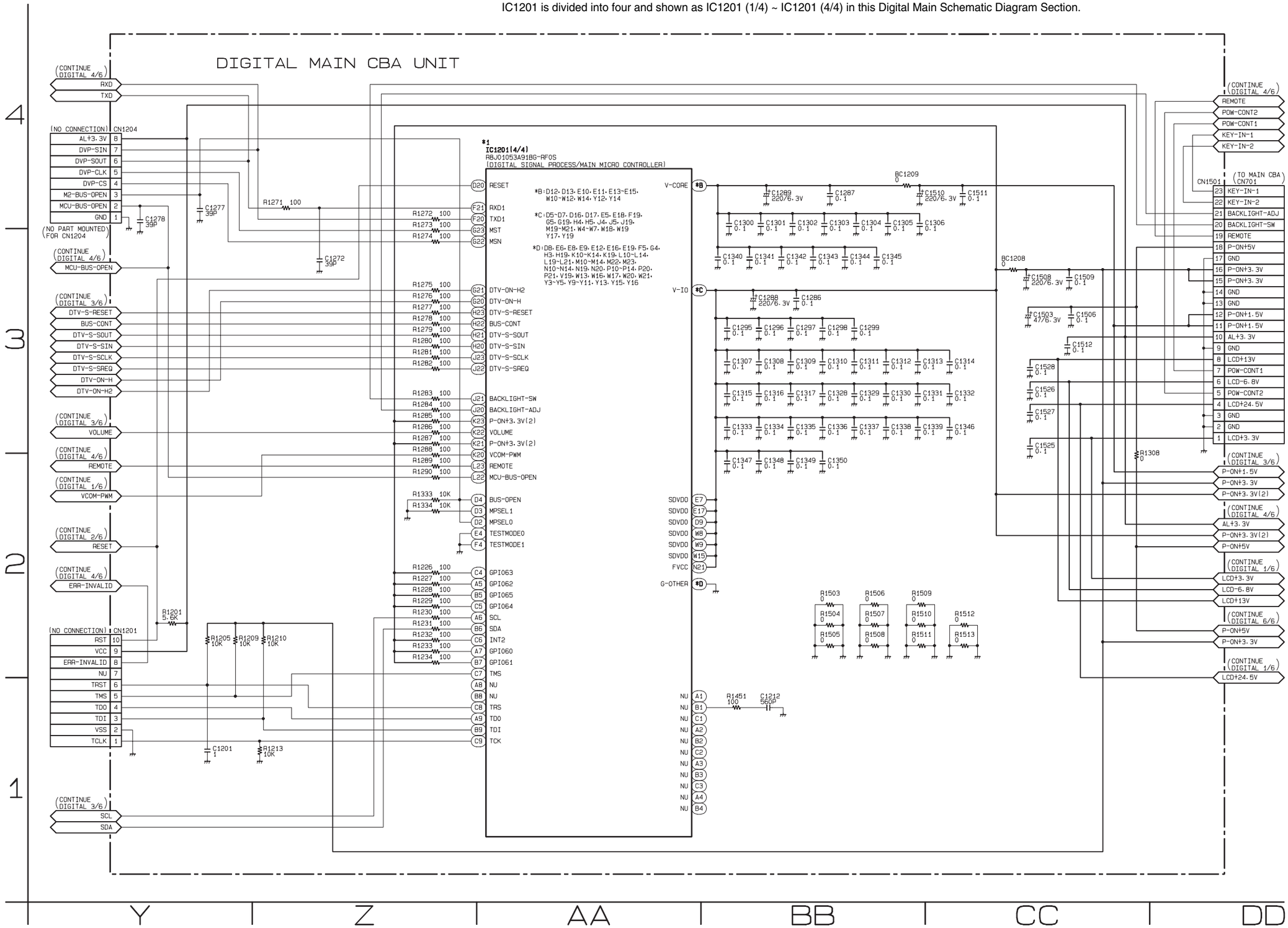
Digital Main 4/6 Schematic Diagram < LCD TV Section >

∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC1201.
IC1201 is divided into four and shown as IC1201 (1/4) ~ IC1201 (4/4) in this Digital Main Schematic Diagram Section.

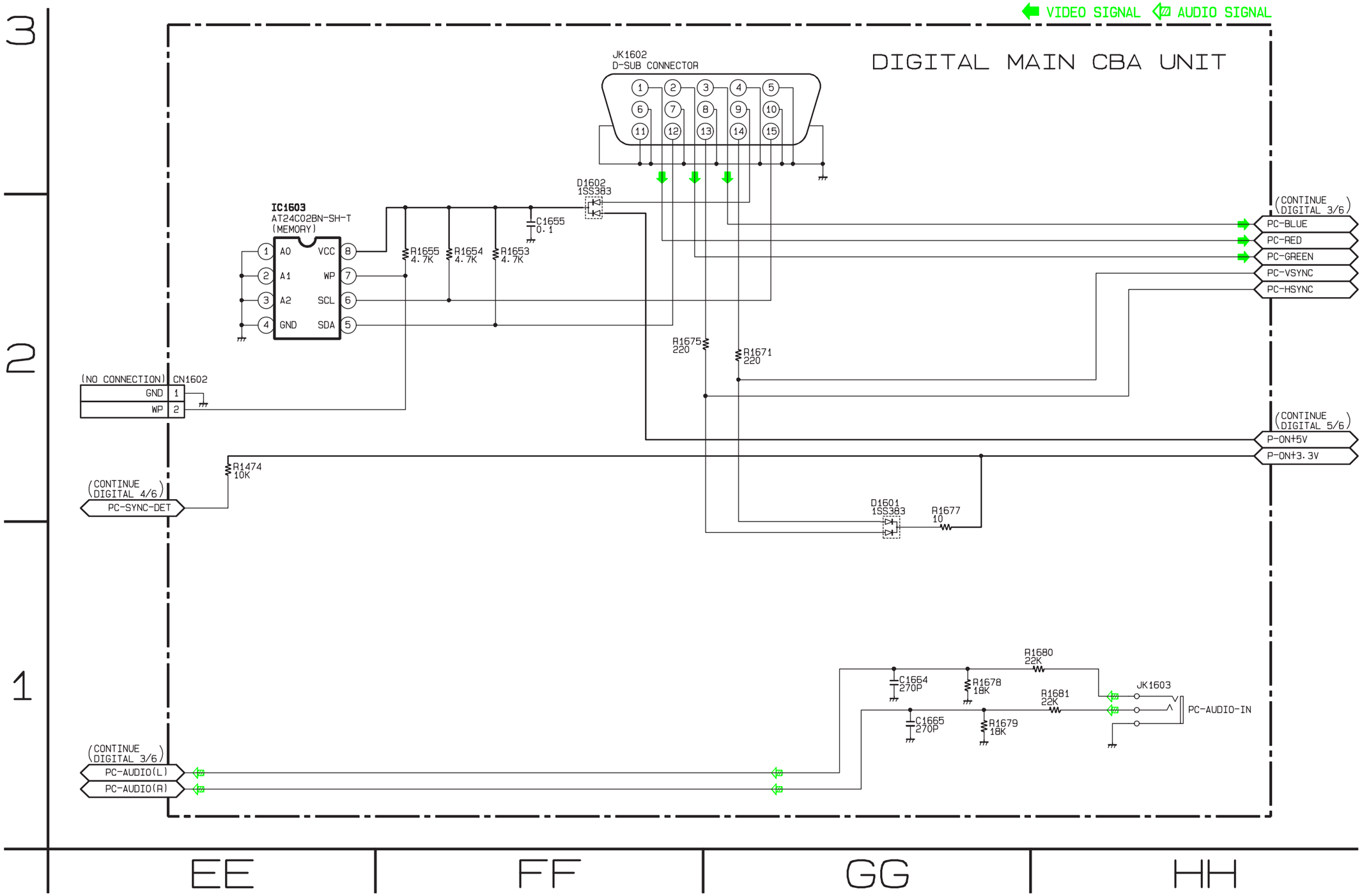


Digital Main 5/6 Schematic Diagram < LCD TV Section >

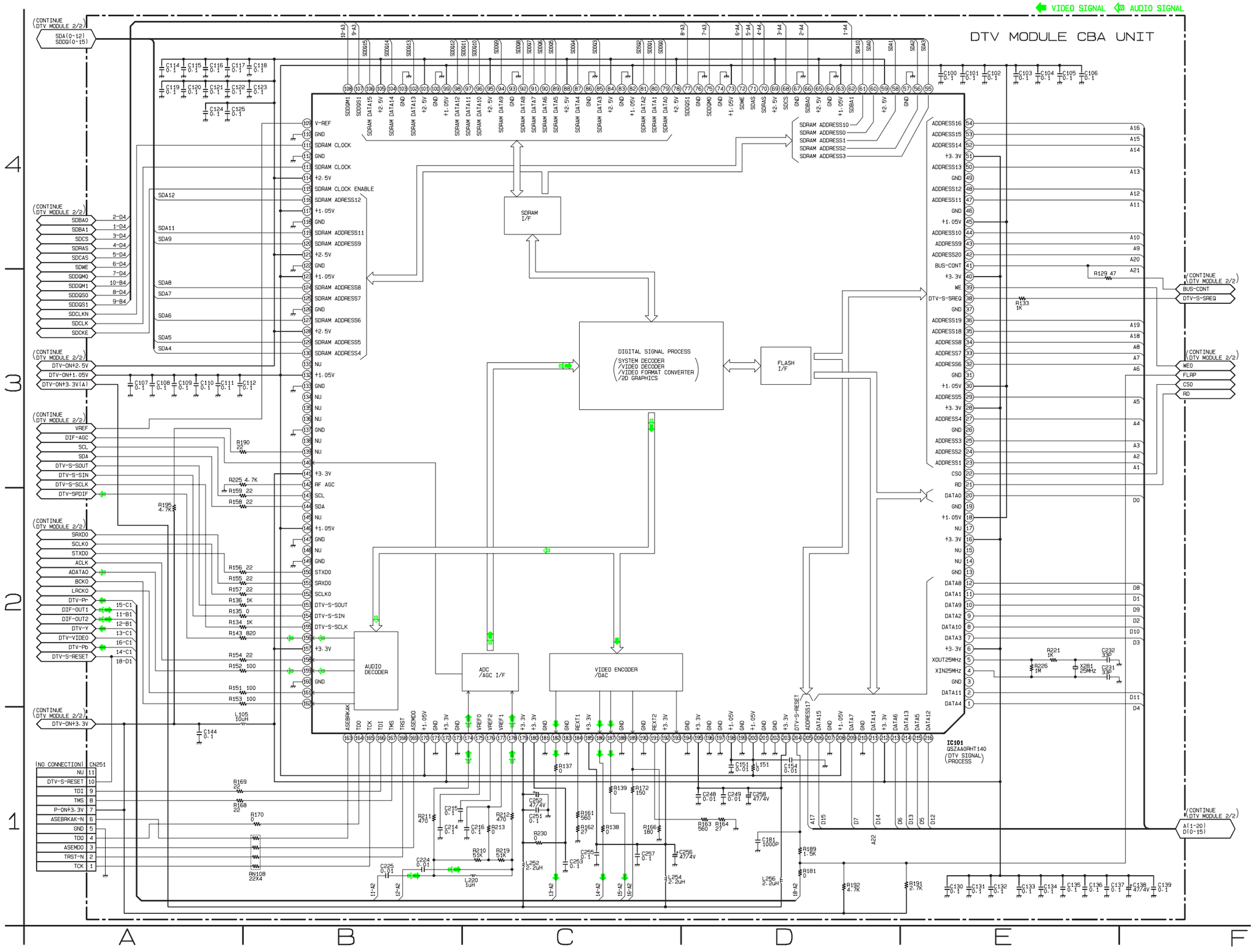
∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC1201.
IC1201 is divided into four and shown as IC1201 (1/4) ~ IC1201 (4/4) in this Digital Main Schematic Diagram Section.



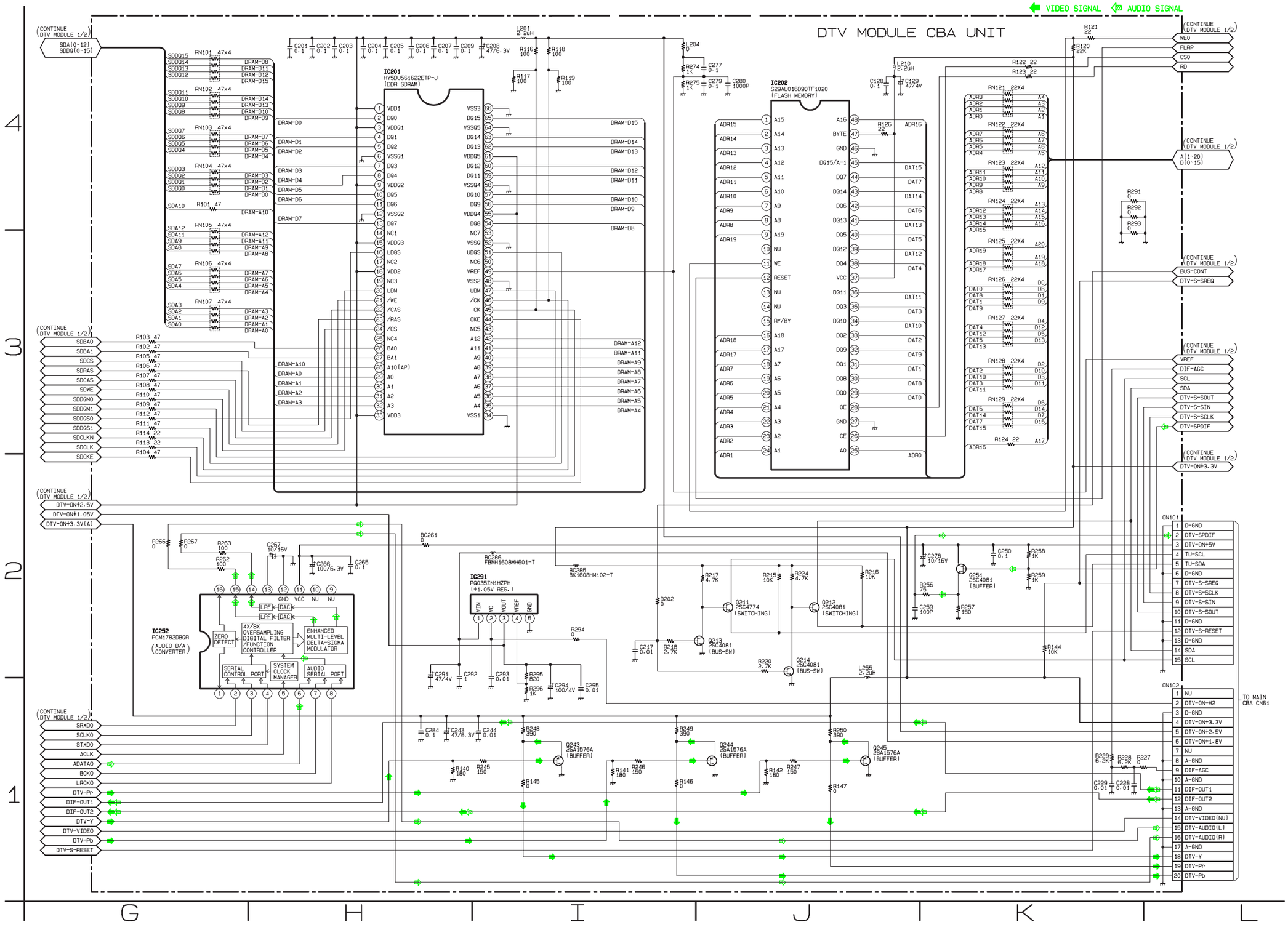
Digital Main 6/6 Schematic Diagram < LCD TV Section >



DTV Module 1/2 Schematic Diagram < LCD TV Section >

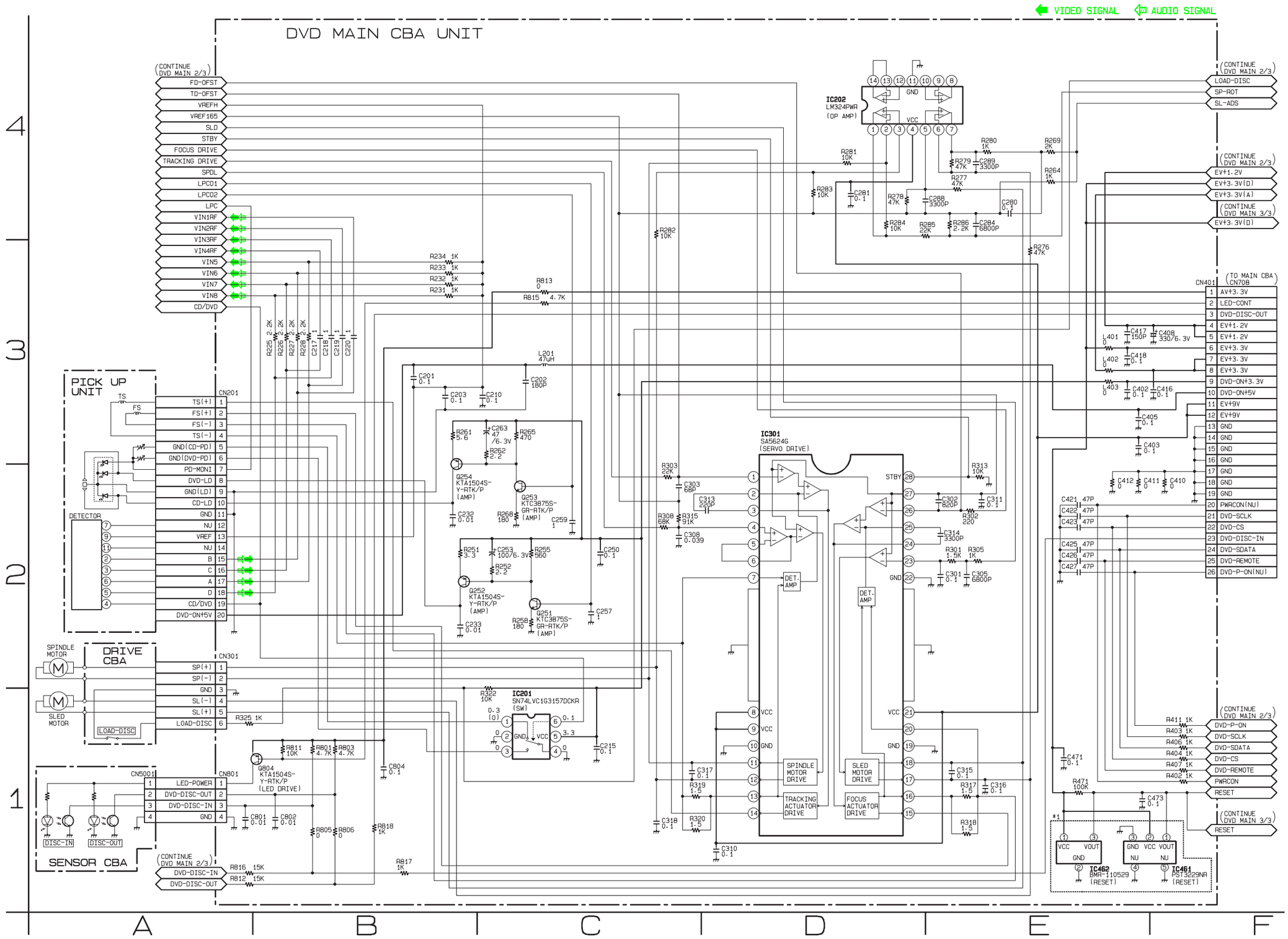


DTV Module 2/2 Schematic Diagram < LCD TV Section >

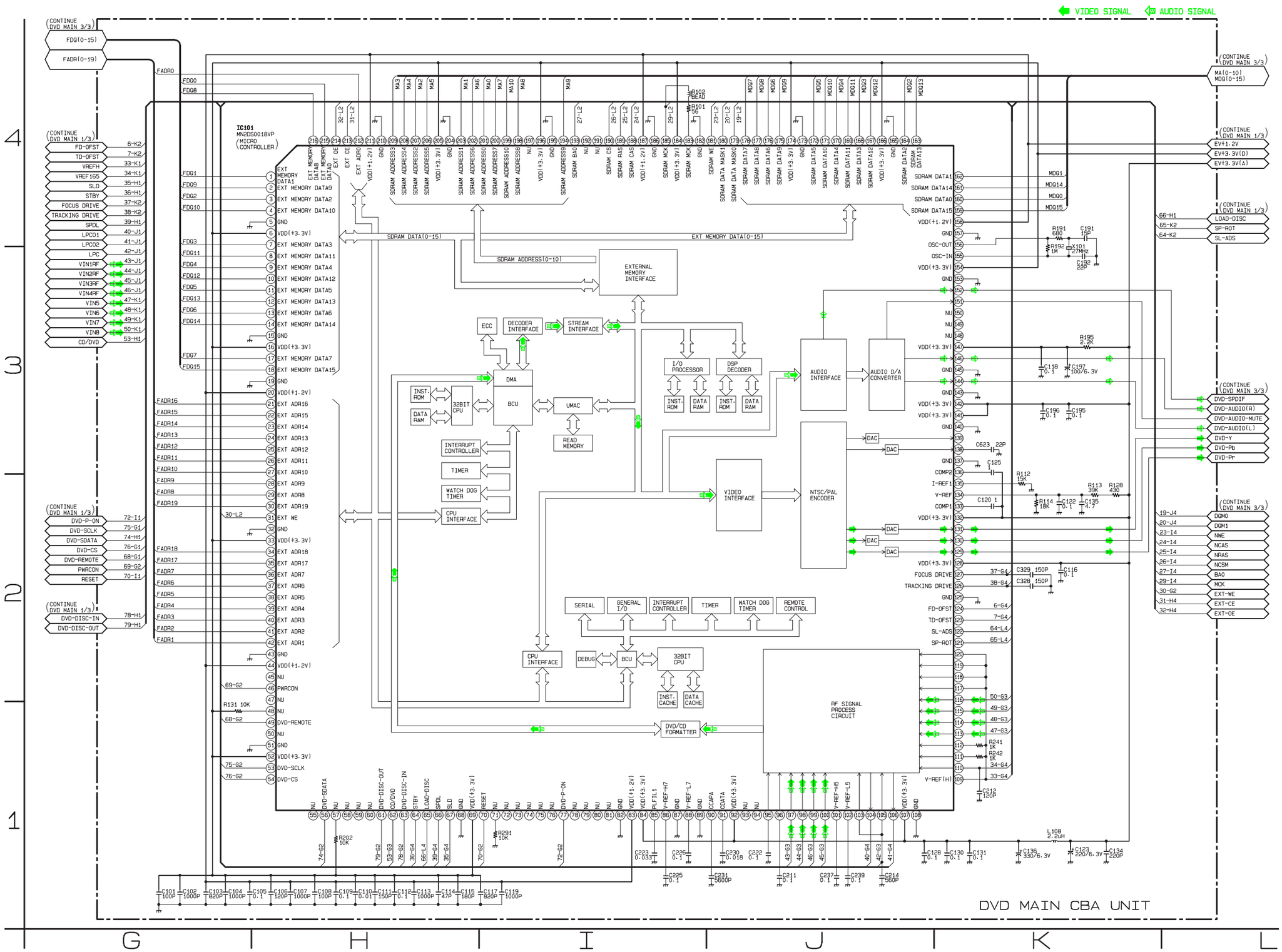


DVD Main 1/3 Schematic Diagram < DVD Section >

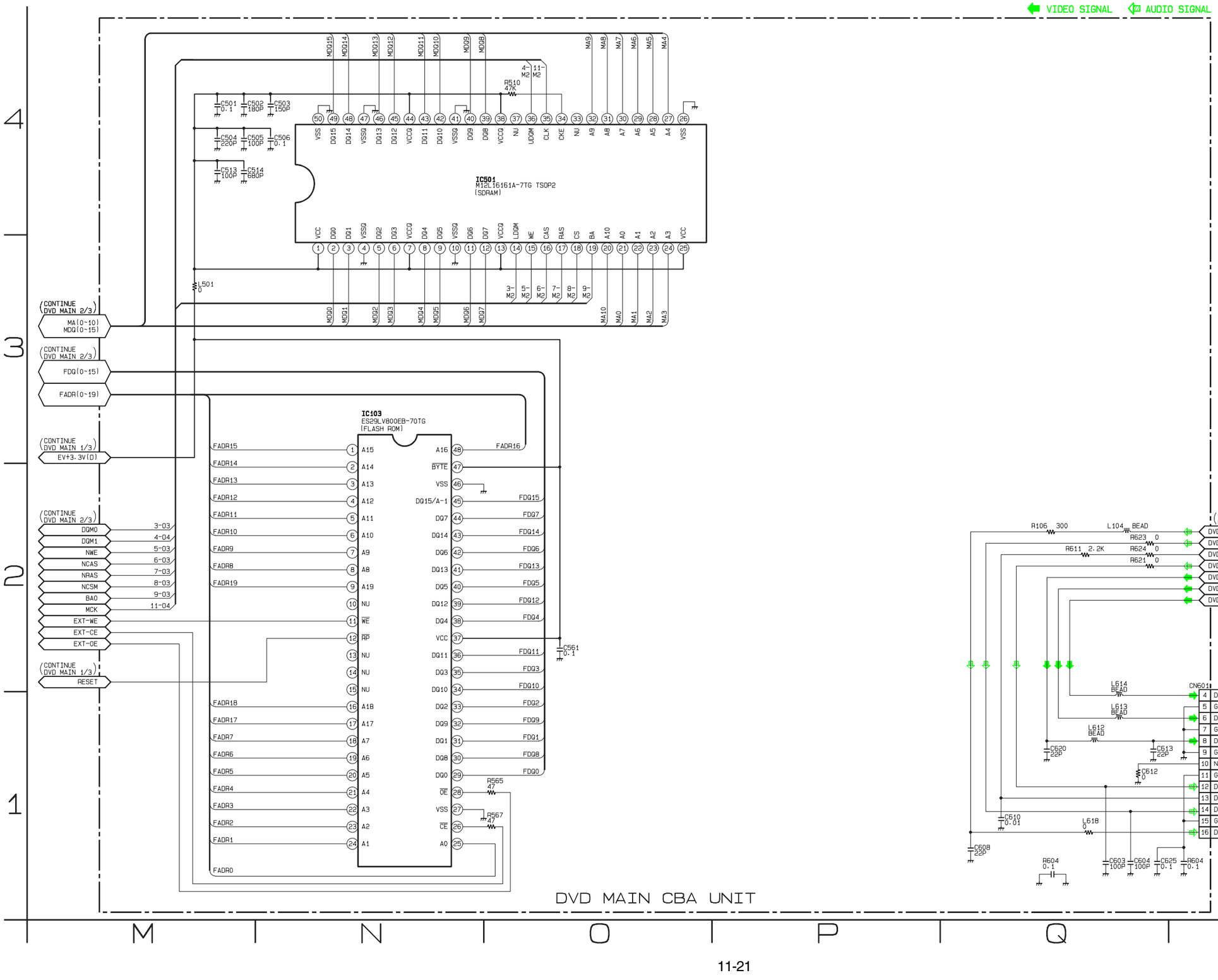
***1 NOTE:**
Either IC461 or IC462 is used for DVD MAIN CBA UNIT.



DVD Main 2/3 Schematic Diagram < DVD Section >

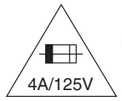


DVD Main 3/3 Schematic Diagram < DVD Section >



MAIN CBA Top View

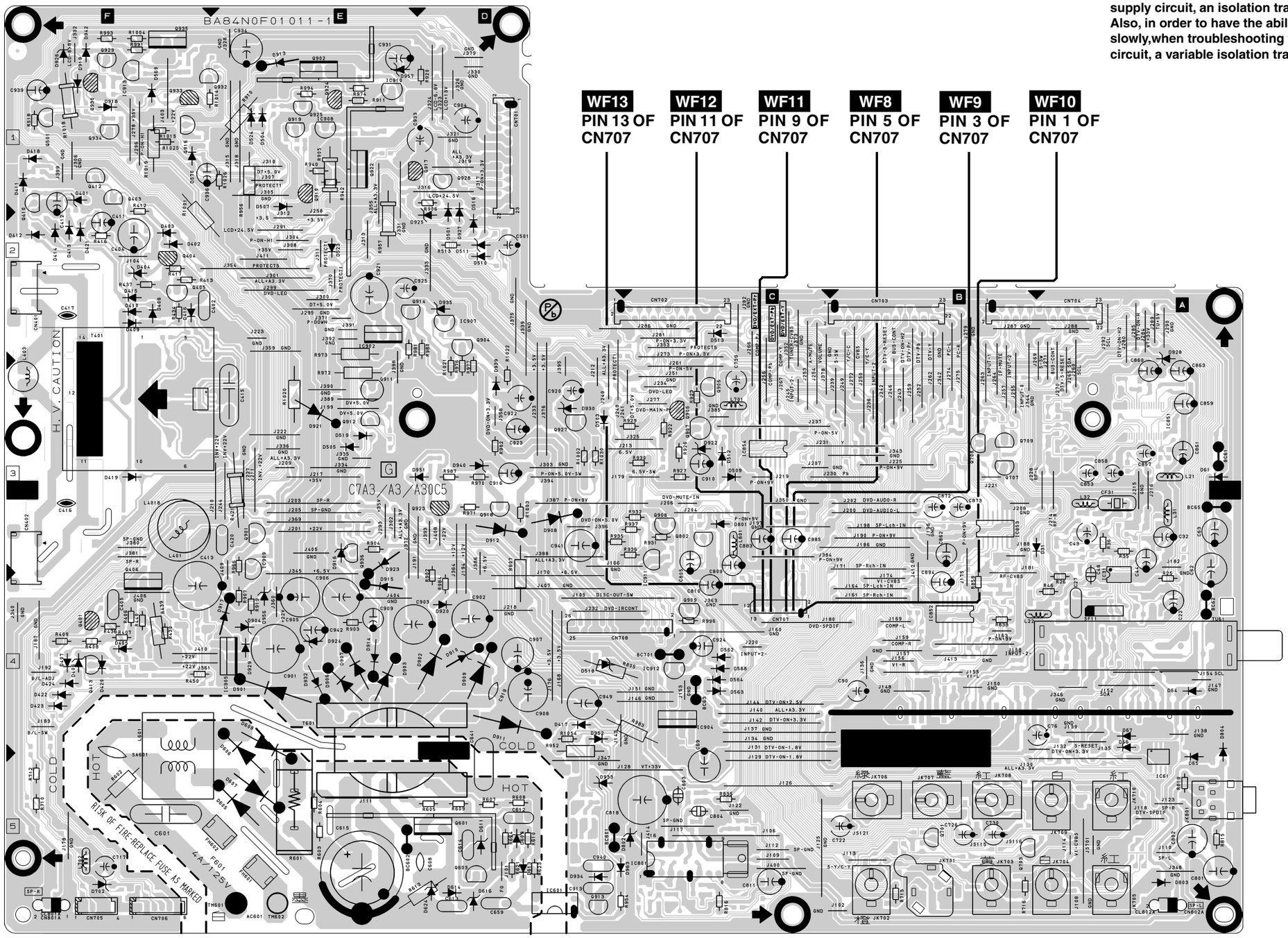
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.



CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly,when troubleshooting this type power supply circuit, a variable isolation transformer is required.



MAIN CBA Bottom View

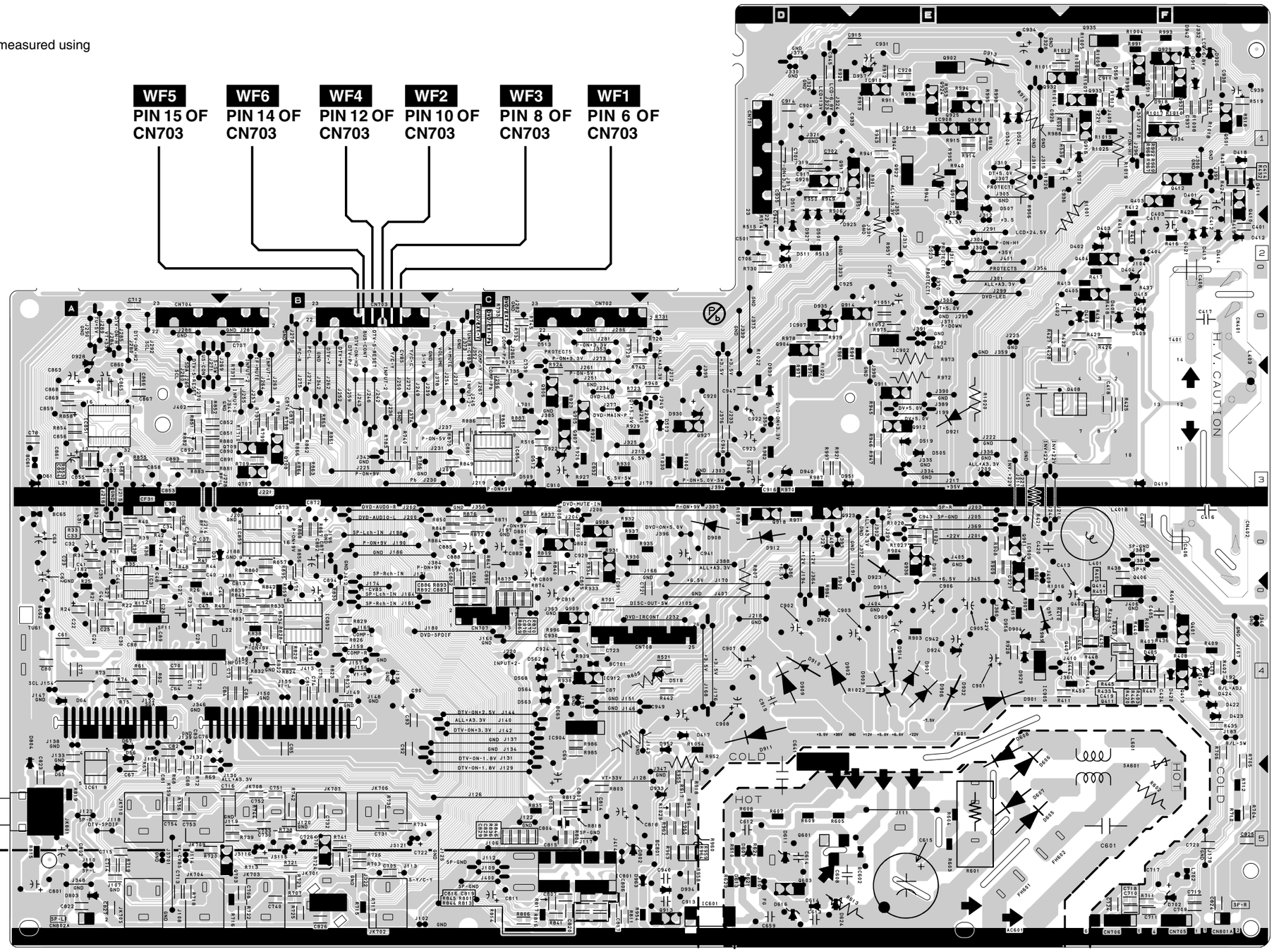
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

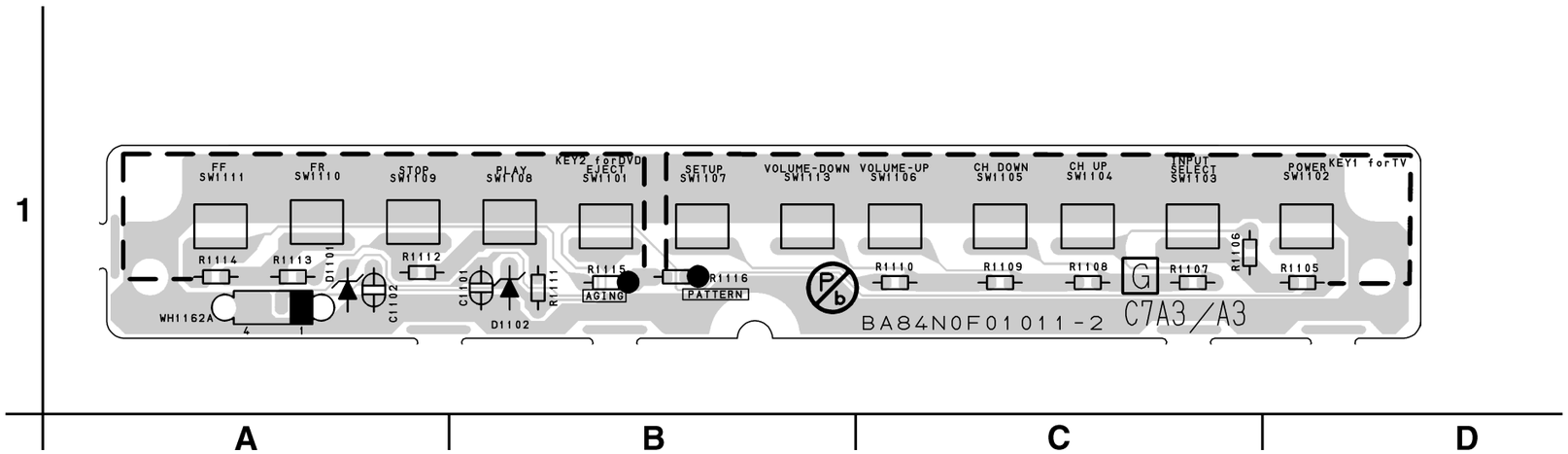
4A/125V

CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

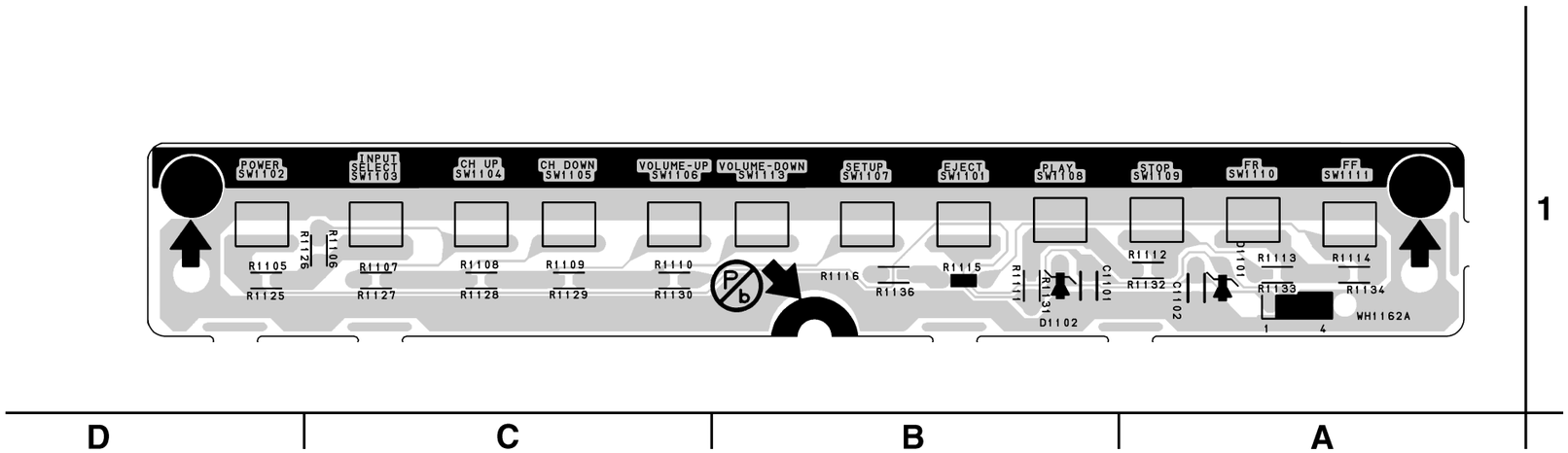
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly,when troubleshooting this type power supply circuit, a variable isolation transformer is required.



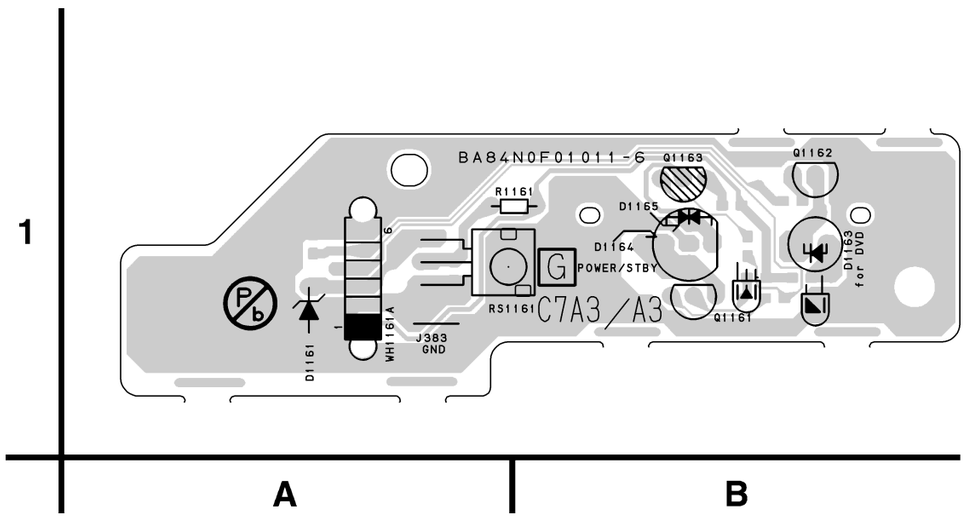
Function CBA Top View



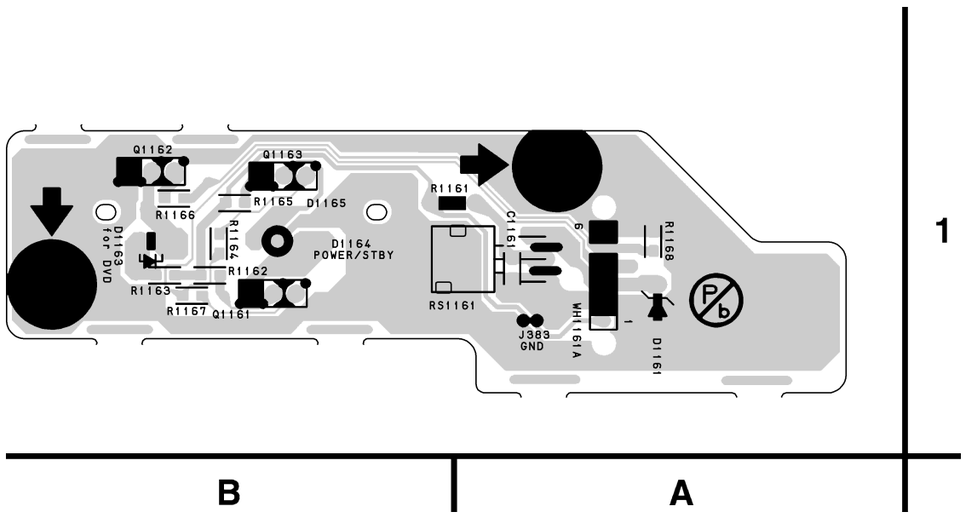
Function CBA Bottom View



IR Sensor CBA Top View

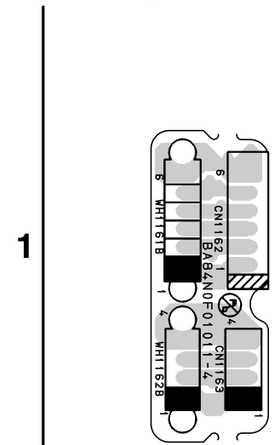


IR Sensor CBA Bottom View

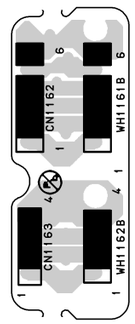


BA84N0F01011-6

JUNCTION CBA
Top View



JUNCTION CBA
Bottom View



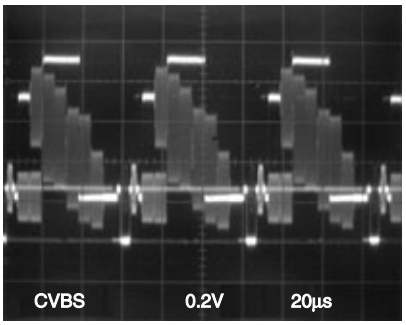
BA84N0F01011-4

WAVEFORMS < LCD TV SECTION >

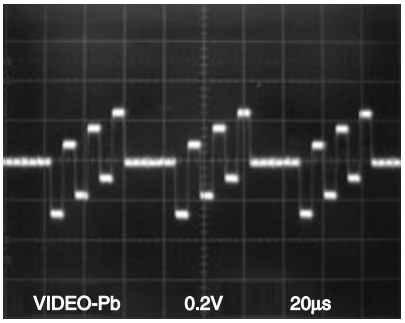
WF1 ~ WF7 = Waveforms to be observed at
Waveform check points.
(Shown in Schematic Diagram.)

Input: NTSC Color Bar Signal (with 1kHz Audio Signal)

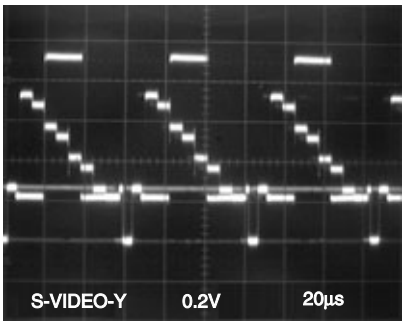
WF1 Pin 6 of CN703



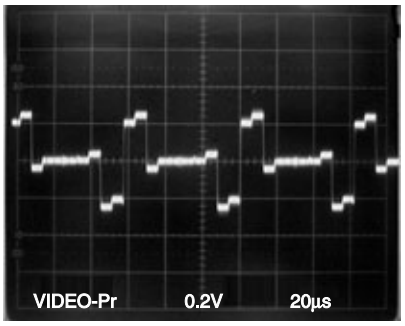
WF5 Pin 15 of CN703



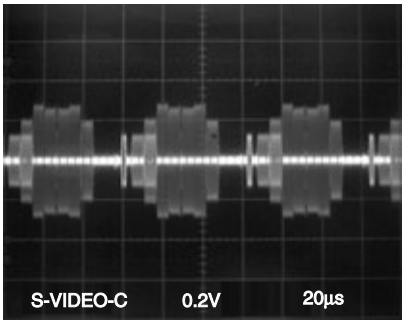
WF2 Pin 10 of CN703



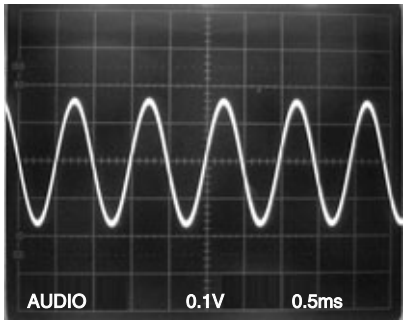
WF6 Pin 14 of CN703



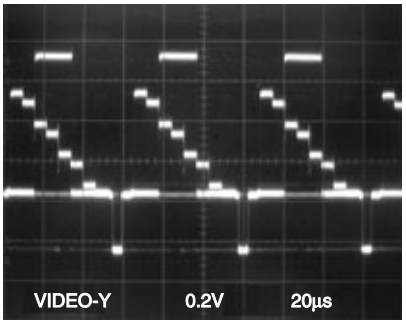
WF3 Pin 8 of CN703



WF7 Pin 14 of IC801



WF4 Pin 12 of CN703

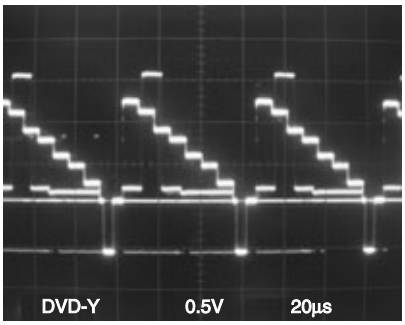


WAVEFORMS < DVD SECTION >

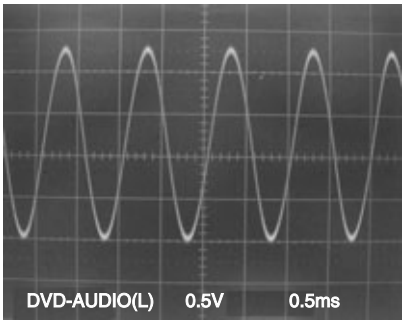
WF8 ~ WF13 = Waveforms to be observed at
Waveform check points.
(Shown in Schematic Diagram.)

Input: NTSC Color Bar Signal (with 1kHz Audio Signal)
DVD Video (Power on (Stop) MODE)

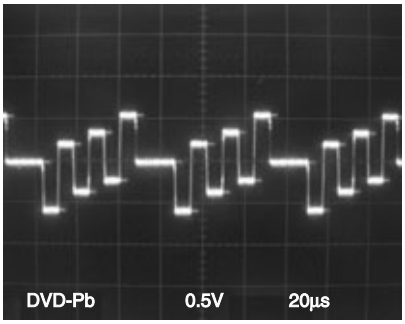
WF8 Pin 5 of CN707



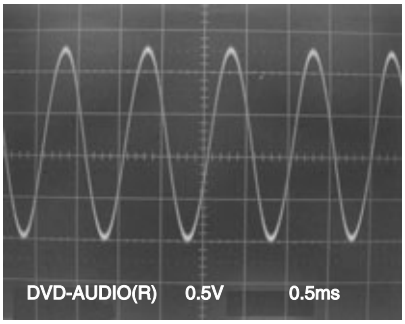
WF11 Pin 9 of CN707



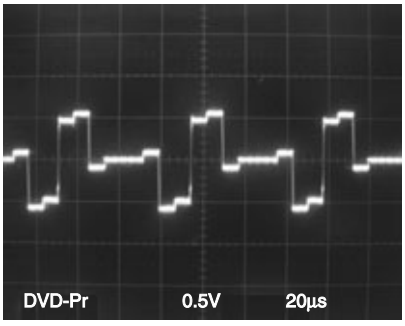
WF9 Pin 3 of CN707



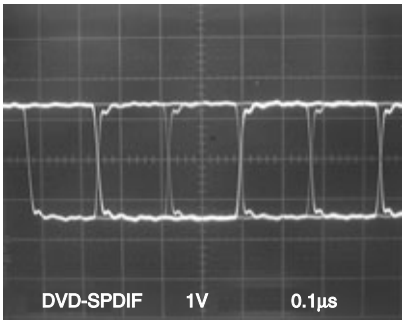
WF12 Pin 11 of CN707



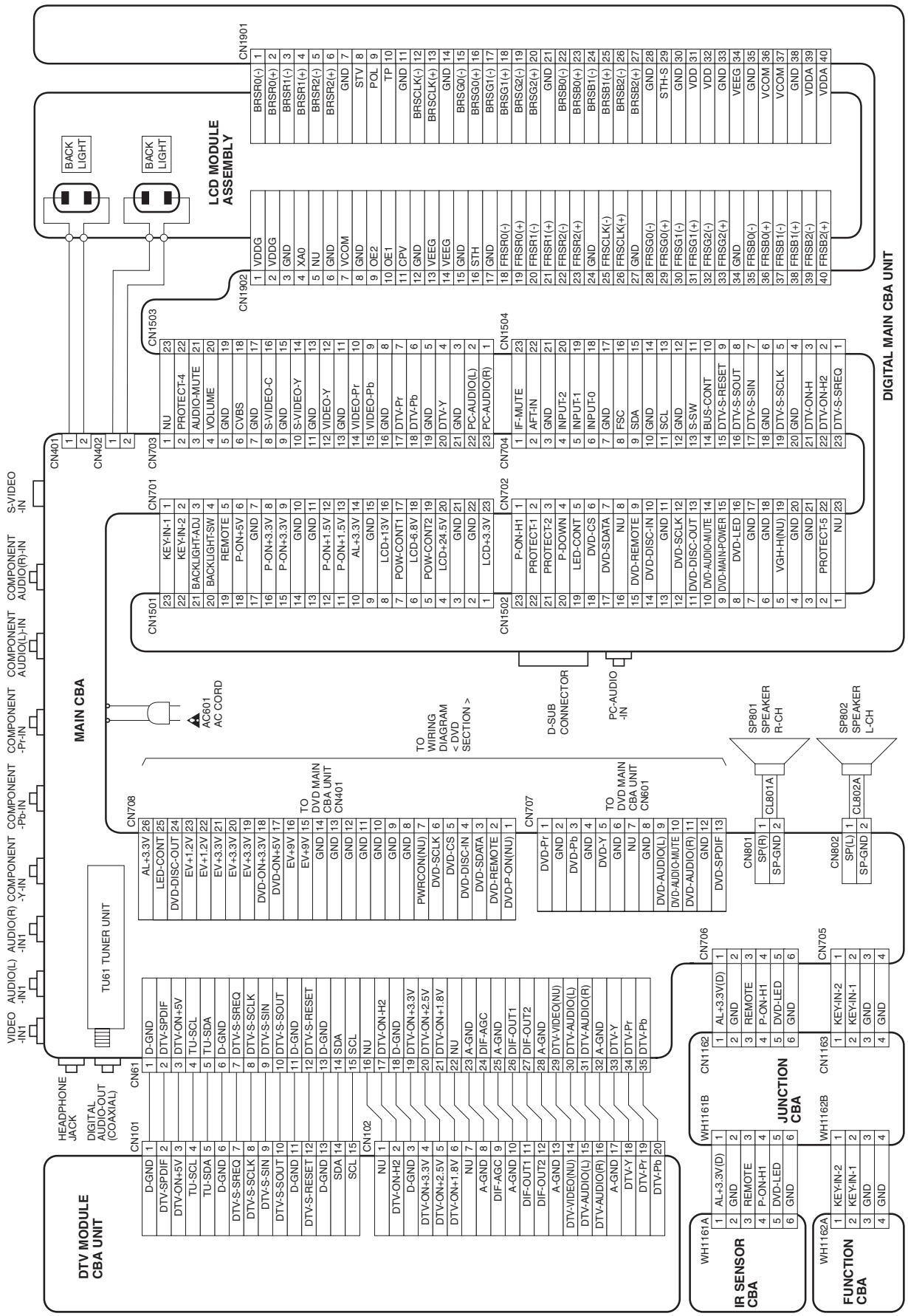
WF10 Pin 1 of CN707



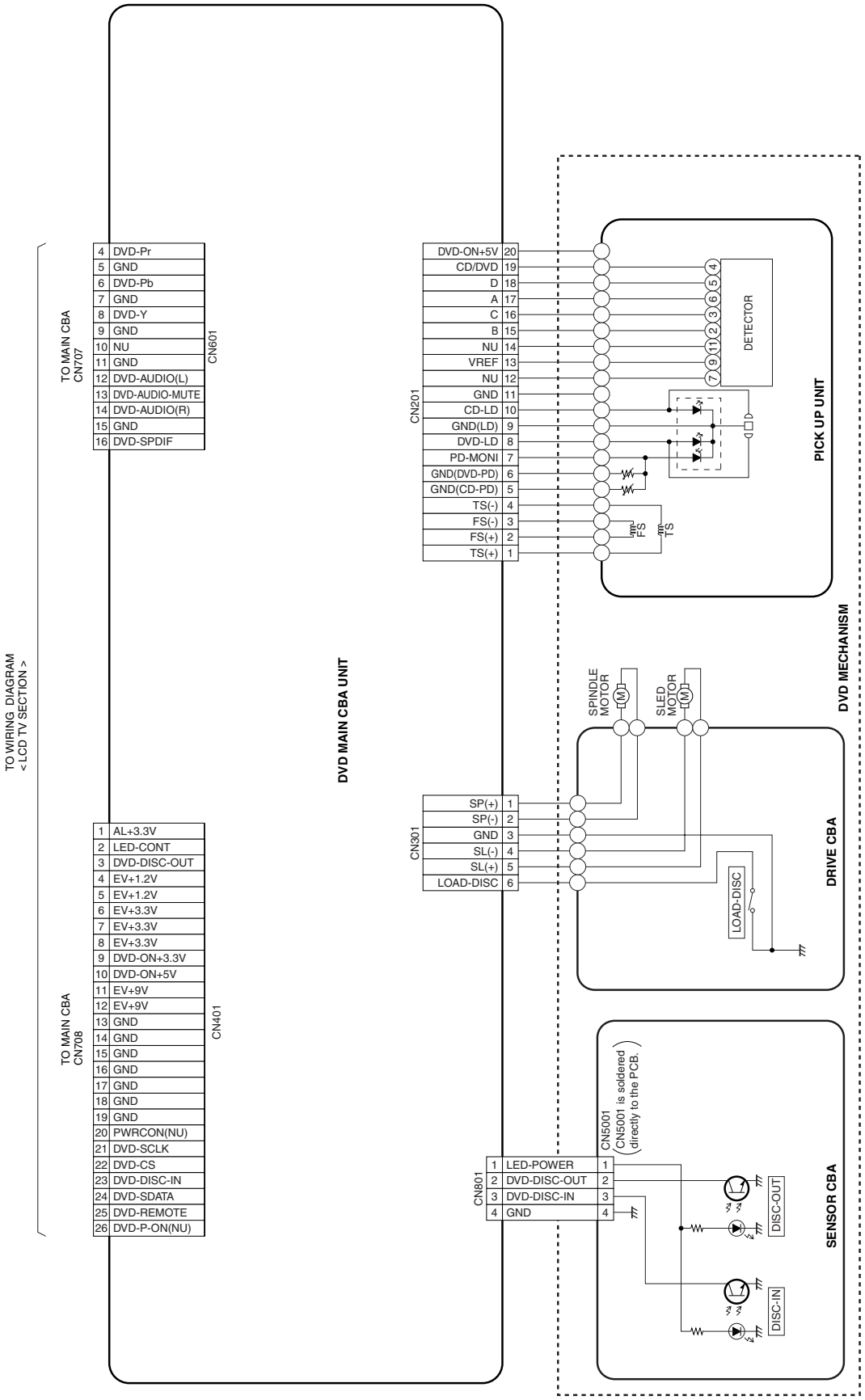
WF13 Pin 13 of CN707



WIRING DIAGRAM < LCD TV SECTION >

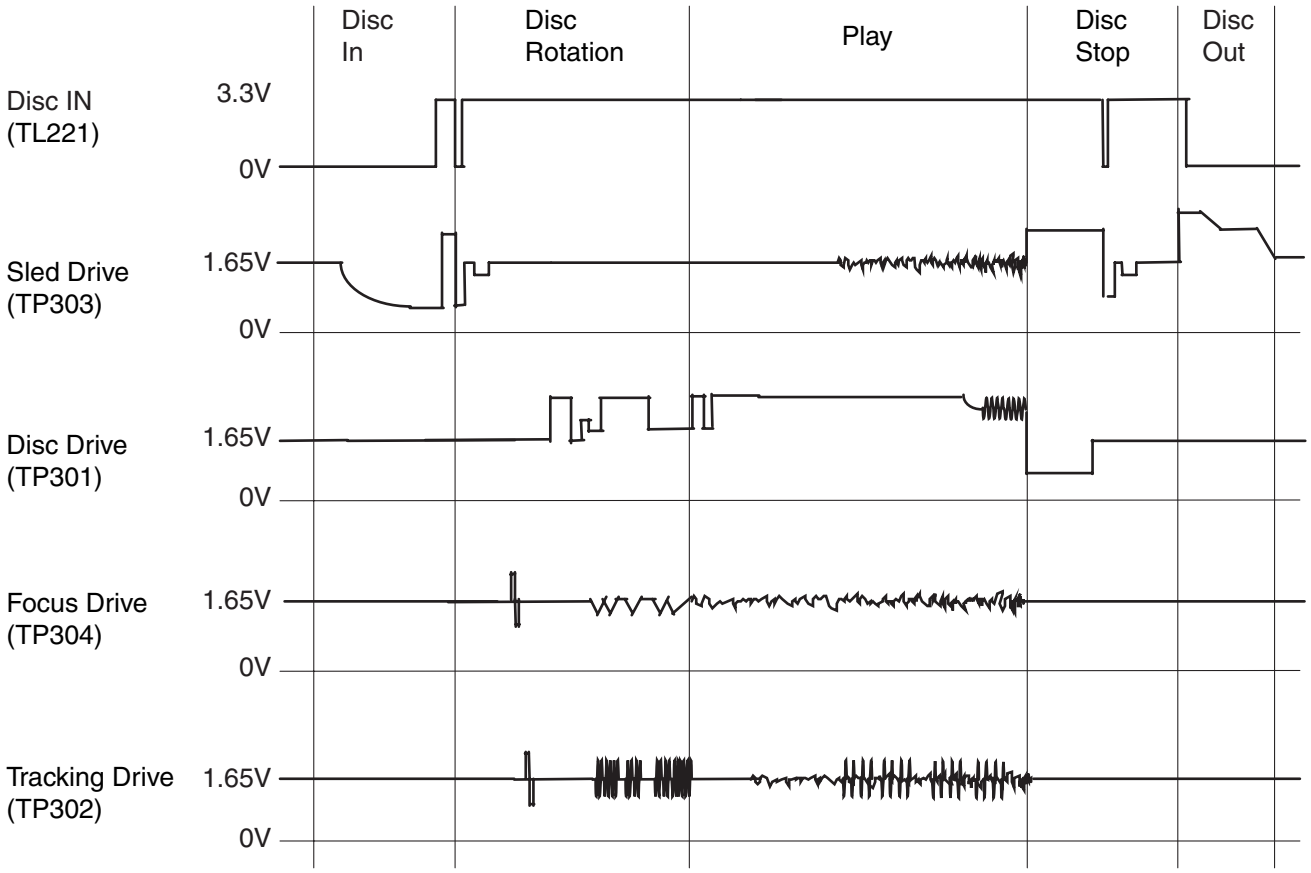


WIRING DIAGRAM < DVD SECTION >



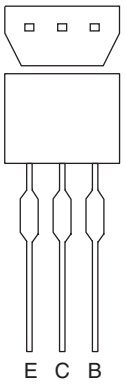
SYSTEM CONTROL TIMING CHARTS

Disc In ~ Play/Play ~ Disc Out

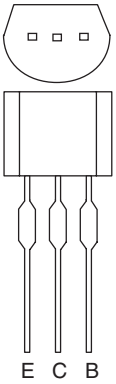


LEAD IDENTIFICATIONS

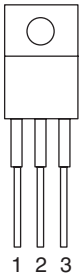
KTA1267-GR-AT/P
KTC3199-GR-AT/P



2SA950-O(TE2 F T)
2SC2120-Y(TE2 F T)
2SD400(F)

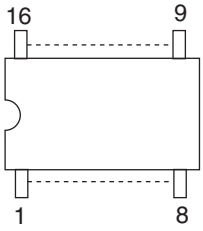


KIA7805API/P

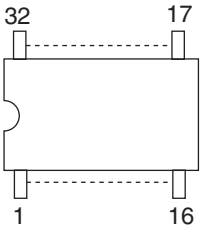


1: IN
2: GND
3: OUT

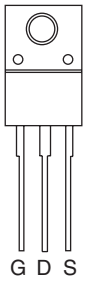
TC4053BF(EL N F)
TC4052BF(ELNF)



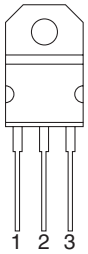
AN5832SA-E1V



2SK3563(Q)

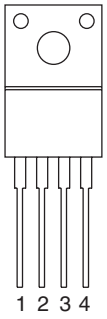


LD1117V



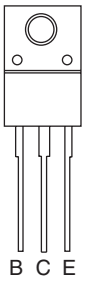
1: Vin
2: Vo
3: GND

PQ070XFC1SZF

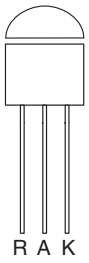


1: Vin
2: Vo
3: GND
4: Vc

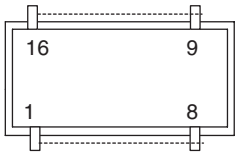
2SC4881F HFE



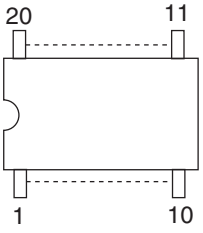
KIA431-AT/P
KIA2431AP-AT/P



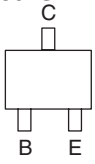
AN17812A



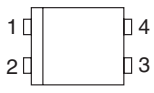
M61116FP TF0G



KTC3875S-GR-RTK/P
KTA1504S-Y-RTK/P

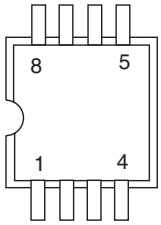


LTV-817MCF



1: A
2: K
3: E
4: C

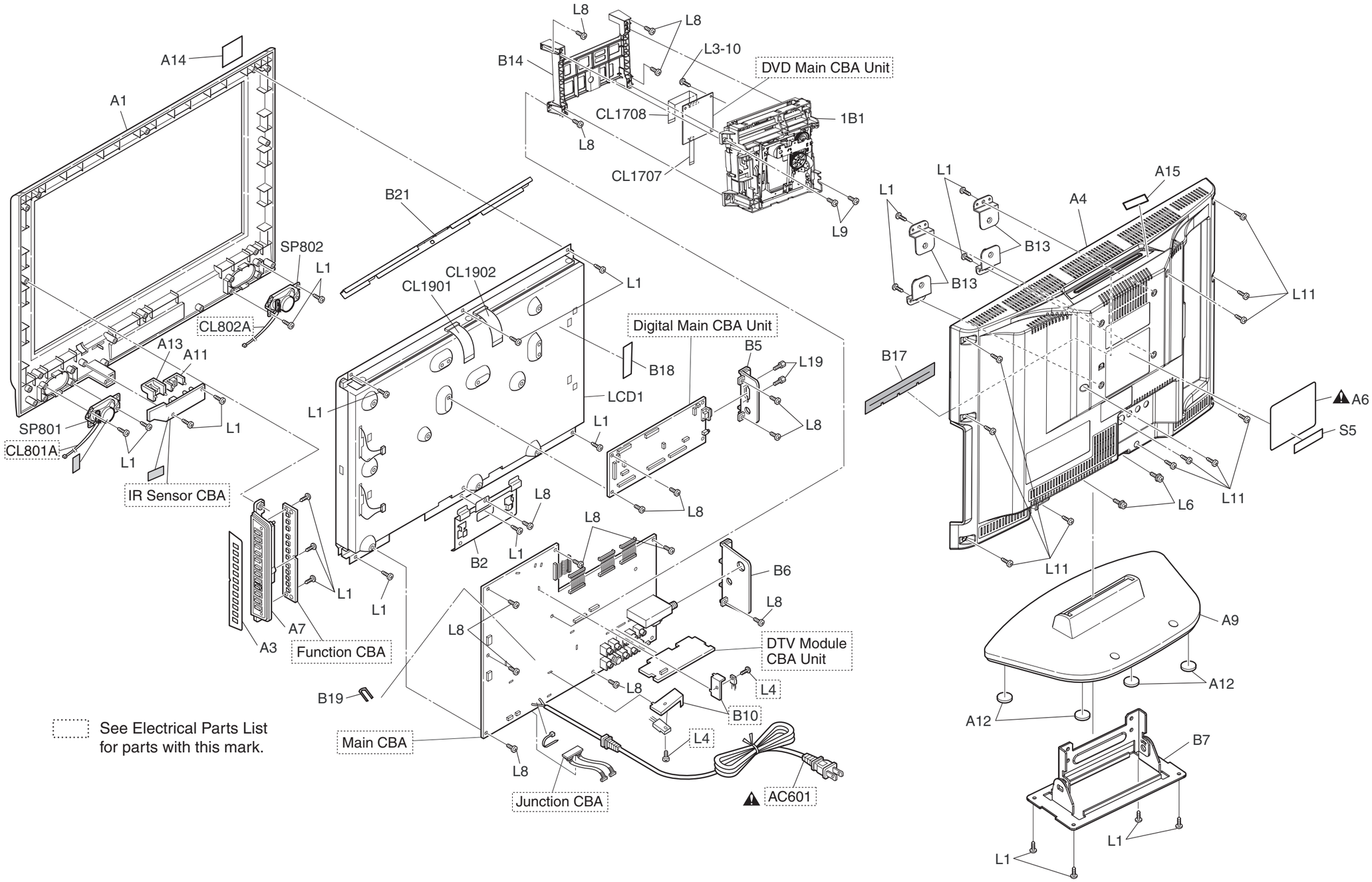
AT24C128BN-SH-T
HAT2215R01-EL-E



Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

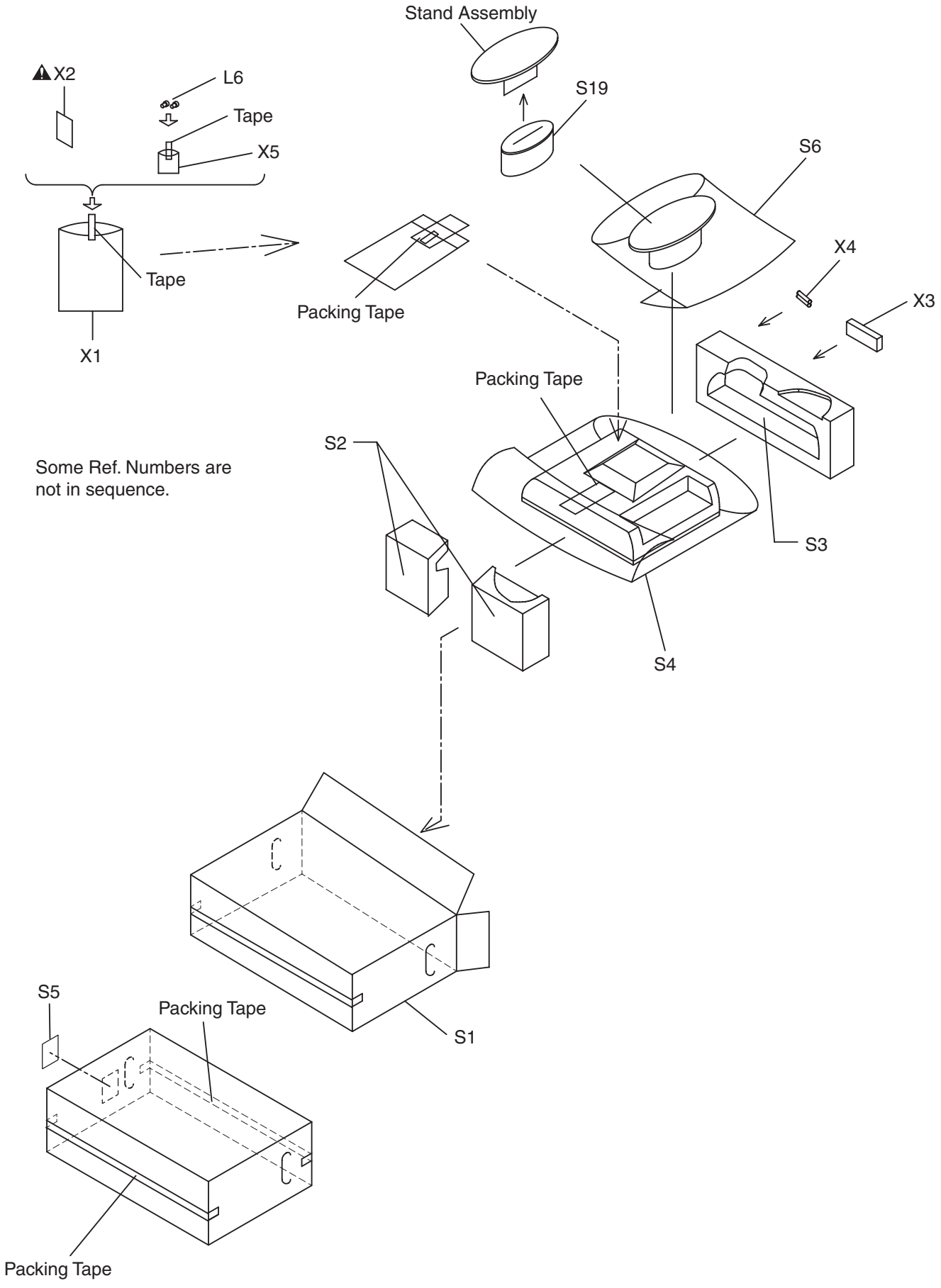
EXPLODED VIEWS

Cabinet



See Electrical Parts List for parts with this mark.

Packing


Stand Assembly
⚠X2
L6
Tape
X5
S19
S6
Tape
X1
Packing Tape
X4
X3
Packing Tape
S2
Some Ref. Numbers are
not in sequence.
S3
S4
S5
Packing Tape
S1
Packing Tape

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that are not assigned part numbers (---------) are not available.

Ref. No.	Description	Part No.
A1	FRONT CABINET A84N1UH	1EM122693
A3	CONTROL PLATE A84N0UH	1EM323798
A4	REAR CABINET A84N0UH	1EM022245
A6⚠	RATING LABEL A84N1UH	---------
A7	FUNCTION KNOB A84N0UH	1EM222043
A9	STAND COVER A81N0UH	1EM021788A
A11	LED LENS A81N6UH	1EM323803
A12	STAND RUBBER FOOT A8AN0UH	1EM426377
A13	SENSOR LENS A81N6UH	1EM323457
A14	POP LABEL A84N1UH	---------
A15	CAUTION LABEL A84N0UH	---------
1B1	DVD MECHA SLOT E7 N7XT2KVM	N7XT2KVM
B2	TILT STAND HOLDER A81N0UH	1EM322710
B5	JACK HOLDER(D) A84N0UH	1EM324738
B6	JACK HOLDER(A) A84N0UH	1EM324737
B7	ARM ASSEMBLY A84N0UH	1EM222243
B13	WALL MOUNT BRACKET A84N0UH	1EM323797
B14	DVD HOLDER A84N0UH	1EM022267
B17	FELT L2550UA	1EM423716
B18	LASER CAUTION LABEL L3150UA	---------
B19	PCB STUD A84N0UH	1EM425857
B21	EARTH PLATE A84N0UH	1EM324577
CL1707	WIRE ASSEMBLY 13PIN FFC 13PIN/60MM	WX1A84N0-002
CL1708	WIRE ASSEMBLY 26PIN FFC 26PIN/247MM	WX1A84N0-001
CL1901	WIRE ASSEMBLY FFC FFC 40PIN	WX1A81N0-01B
CL1902	WIRE ASSEMBLY FFC FFC 40PIN	WX1A81N0-01B
L1	SCREW P-TIGHT M3X10 BIND HEAD+	GBJP3100
L3-10	SCREW P-TIGHT M3X8 BIND HEAD+	GBJP3080
L6	DOUBLE SEMS SCREW M4X14 + BLK	FPH34140
L8	SCREW S-TIGHT M3X8 BIND HEAD+	GBJS3080
L9	SCREW P-TIGHT 3X12 WASHER HEAD+	GCJP3120
L11	SCREW P-TIGHT 3X14 BIND HEAD+ BLK	GBHP3140
L19	HEX SCREW #4-40 7MM	1EM422042
LCD1	LCD MODULE 19INCH WIDE CMO 19INCH WXGA	UG190XA
SP801	SPEAKER MAGNETIC S0306N01	DSD0806XQ001
SP802	SPEAKER MAGNETIC S0306N01	DSD0806XQ001
PACKING		
S1	CARTON A84N1UH	1EM324363
S2	STYROFOAM BTM A84N1UH	1EM022688
S3	STYROFOAM TOP A84N1UH	1EM022687
S4	SET BAG A81N0UH	1EM323958
S5	SERIAL NO. LABEL L9750UA	---------
S6	STAND BAG A81N0UH	1EM425888
S19	STAND CAP A84N1UH	1EM426477
ACCESSORIES		
X1	BAG POLYETHYLENE 235X365XT0.03	0EM408420A
X2⚠	OWNERS MANUAL A84N1UH	1EMN23240
X3	REMOTE CONTROL NF605UD 192/ ECNLC6.5D1/NF605	NF605UD
X4	DRY BATTERY(SUNRISE) R6SSE/2S	XB0M451MS002
X5	SCREW BAG A81N0UH	1EM424596A

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% D.....±0.5% F.....±1%

G.....±2% J.....±5% K.....±10%

M.....±20% N.....±30% Z.....+80/-20%

DTV MODULE CBA UNIT

Ref. No.	Description	Part No.
	DTV MODULE CBA UNIT	1ESA16397

DIGITAL MAIN CBA UNIT

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	1ESA15985

DVD MAIN CBA UNIT

Ref. No.	Description	Part No.
	DVD MAIN CBA UNIT	N7ETBKUP

MMA CBA

Ref. No.	Description	Part No.
	MMA CBA Consists of the following:	1ESA15965
	MAIN CBA FUNCTION CBA IR SENSOR CBA JUNCTION CBA	---------- ---------- ---------- ----------

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA Consists of the following:	----------
	CAPACITORS	
C23	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C24	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C25	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C27	POLYESTER FILM CAP. (PB FREE) 0.018μF/ 100V J	CA2A183DT018
C28	CHIP CERAMIC CAP.(1608) B K 0.047μF/50V	CHD1JK30B473
C29	CHIP CERAMIC CAP. CH D 3pF/50V	CHD1JD3CH3R0
C32	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C34	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C35	CHIP CERAMIC CAP. (1608) F Z 1μF/16V	CHD1CZ30F105
C36	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C37	CHIP CERAMIC CAP. CH J 680pF/50V	CHD1JJ3CH681
C39	CHIP CERAMIC CAP. F Z 0.47μF/10V	CHD1AZ30F474
C41	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C42	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C46	CHIP CERAMIC CAP. F Z 2.2μF/10V	CHD1AZ30F225
C47	CHIP CERAMIC CAP. CH D 3pF/50V	CHD1JD3CH3R0
C62	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C63	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C64	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C67	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C68	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C69	ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASDL102
C71	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C72	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C74	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C75	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C77	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C80	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C83	CHIP CERAMIC CAP. CH J 330pF/50V	CHD1JJ3CH331
C84	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C89	CHIP CERAMIC CAP. CH J 220pF/50V	CHD1JJ3CH221
C91	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C92	CHIP CERAMIC CAP. CH J 330pF/50V	CHD1JJ3CH331
C93	CHIP CERAMIC CAP. CH J 330pF/50V	CHD1JJ3CH331
C401	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C402	POLYESTER FILM CAP. (PB FREE) 0.1μF/100V J	CA2A104DT018
C404	ELECTROLYTIC CAP. 220μF/16V M	CE1CMASDL221
C405	POLYESTER FILM CAP. (PB FREE) 0.1μF/100V J	CA2A104DT018
C406	CAP CHIP CERAMIC 5pF/3.15KV/DJ	CA3F5R0MR060
C407	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C408	CAP CHIP CERAMIC 5pF/3.15KV/DJ	CA3F5R0MR060
C411	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C412	ELECTROLYTIC CAP. 47μF/25V M	CE1EMASDL470
C413	ELECTROLYTIC CAP. 470μF/25V M	CE1EMASDL471
C414	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C415	CAP METALLIZED FILM 0.11UF 250V H MPEF	CT2E114DT065
C416	CAP CERAMIC HV 12P 3KV SL J	CCD3FJPSL120
C417	CAP CERAMIC HV 12P 3KV SL J	CCD3FJPSL120
C419	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C420	POLYESTER FILM CAP. (PB FREE) 0.1μF/100V J	CA2A104DT018
C423	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C501	ELECTROLYTIC CAP. 10μF/50V M H7	CE1JMAVSL100
C601⚠	METALIZED FILM CAP. 0.22μF/250V	CT2E224MS037
C608	CERAMIC CAP. 560pF/2KV	CA3D561PAN04
C612	POLYESTER FILM CAP. (PB FREE) 0.027μF/ 100V J	CA2A273DT018
C613	POLYESTER FILM CAP. (PB FREE) 0.068μF/ 100V J	CA2A683DT018
C614	POLYESTER FILM CAP. (PB FREE) 0.001μF/ 100V J	CA2A102DT018
C615⚠	CAP ELE LT 270μF/200V/M/85	CA2D271V8005
C641⚠	CAP CERAMIC 4700pF/250V/M/KX	CA2E472MR101
C659	POLYESTER FILM CAP. (PB FREE) 0.001μF/ 100V J	CA2A102DT018
C701	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C702	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C705	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C706	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C707	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C708	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101

Ref. No.	Description	Part No.
C710	CHIP CERAMIC CAP. CH J 330pF/50V	CHD1JJ3CH331
C711	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C712	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C713	CHIP CERAMIC CAP. B K 1500pF/50V	CHD1JK30B152
C714	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C715	CHIP CERAMIC CAP. B K 1500pF/50V	CHD1JK30B152
C716	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C717	ELECTROLYTIC CAP. 47μF/10V M H7	CE1AMAVSL470
C718	CHIP CERAMIC CAP. CH J 330pF/50V	CHD1JJ3CH331
C720	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C722	ELECTROLYTIC CAP. 10μF/50V M H7	CE1JMAVSL100
C726	ELECTROLYTIC CAP. 10μF/50V M H7	CE1JMAVSL100
C730	ELECTROLYTIC CAP. 10μF/50V M H7	CE1JMAVSL100
C732	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C733	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C751	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C752	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C753	CHIP CERAMIC CAP.(1608) B K 3300pF/50V	CHD1JK30B332
C754	CHIP CERAMIC CAP.(1608) B K 3300pF/50V	CHD1JK30B332
C801	ELECTROLYTIC CAP. 220μF/16V M H7	CE1CMASSL221
C802	ELECTROLYTIC CAP. 220μF/16V M H7	CE1CMASSL221
C805	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C806	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C807	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C809	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C810	ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C811	ELECTROLYTIC CAP. 100μF/16V M	CE1CMASDL101
C812	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C813	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C816	CHIP CERAMIC CAP.(1608) B K 3300pF/50V	CHD1JK30B332
C817	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C818	ELECTROLYTIC CAP. 2200μF/16V M	CE1CMZNDL222
C819	CHIP CERAMIC CAP.(1608) B K 3300pF/50V	CHD1JK30B332
C820	CHIP CERAMIC CAP.(1608) B K 3300pF/50V	CHD1JK30B332
C824	CHIP CERAMIC CAP. CH J 180pF/50V	CHD1JJ3CH181
C826	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C827	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C828	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C829	CHIP CERAMIC CAP.(1608) B K 3300pF/50V	CHD1JK30B332
C853	ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C854	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C855	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C856	CHIP CERAMIC CAP.(1608) B K 0.33μF/10V	CHD1AK30B334
C857	ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C858	ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C859	ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C860	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C861	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C863	ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C864	CHIP CERAMIC CAP.(1608) B K 0.022μF/50V	CHD1JK30B223
C865	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C866	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C867	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C868	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C869	CHIP CERAMIC CAP.(1608) B K 0.022μF/50V	CHD1JK30B223
C872	ELECTROLYTIC CAP. 10μF/50V M H7	CE1JMAVSL100
C873	ELECTROLYTIC CAP. 10μF/50V M H7	CE1JMAVSL100
C874	CHIP CERAMIC CAP. (1608) F Z 1μF/16V	CHD1CZ30F105
C875	CHIP CERAMIC CAP. (1608) F Z 1μF/16V	CHD1CZ30F105
C881	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C882	CHIP CERAMIC CAP. (1608) F Z 1μF/16V	CHD1CZ30F105
C883	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C884	CHIP CERAMIC CAP. (1608) F Z 1μF/16V	CHD1CZ30F105

Ref. No.	Description	Part No.
C885	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C889	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C890	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C891	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C892	CHIP CERAMIC CAP.(1608) B K 2.2μF/10V	CHD1AK30B225
C893	CHIP CERAMIC CAP.(1608) B K 2.2μF/10V	CHD1AK30B225
C894	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C895	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C901	ELECTROLYTIC CAP. 2200μF/25V M	CE1EMZNDL222
C902	ELECTROLYTIC CAP. 470μF/25V M	CE1EMASDL471
C903	ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPDL102
C904	ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMAVSL221
C905	ELECTROLYTIC CAP. 2200μF/10V M	CE1AMZNDL222
C906	ELECTROLYTIC CAP. 470μF/16V M	CE1CMASDL471
C907	ELECTROLYTIC CAP. 100μF/50V M	CE1JMASDL101
C908	ELECTROLYTIC CAP 3300μF/6.3V M	CE0KMZNDL332
C909	ELECTROLYTIC CAP. 0.47μF/50V M	CE1JMASDLR47
C910	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C911	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C913	POLYESTER FILM CAP. (PB FREE) 0.0027μF/ 100V J	CA2A272DT018
C916	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C919	CERAMIC CAP. B K 1500pF/1KV	CCD3AKP0B152
C920	ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C921	ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASDL102
C922	ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMAVSL221
C923	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C925	ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMAVSL470
C931	ELECTROLYTIC CAP. 220μF/6.3V M	CE0KMASDL221
C932	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C933	ELECTROLYTIC CAP. 100μF/10V M H7	CE1AMAVSL101
C934	ELECTROLYTIC CAP. 220μF/16V M	CE1CMASDL221
C935	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C936	ELECTROLYTIC CAP. 22μF/50V M	CE1JMASDL220
C937	CHIP CERAMIC CAP. (1608) F Z 1μF/16V	CHD1CZ30F105
C938	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C939	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C941	ELECTROLYTIC CAP. 220μF/16V M	CE1CMASDL221
C942	ELECTROLYTIC CAP. 100μF/25V M	CE1EMASDL101
C943	CHIP CERAMIC CAP. B K 0.15μF/10V	CHD1AK30B154
C949	ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASDL102
	CONNECTORS	
CN401	CONNECTOR PRINT OSU KW04-800-0200	J30402KET001
CN402	CONNECTOR PRINT OSU KW04-800-0200	J30402KET001
CN701	TWG CONNECTOR 23P TWG-P23P-A1	J3TWA23TG001
CN702	TWG CONNECTOR 23P TWG-P23P-A1	J3TWA23TG001
CN703	TWG CONNECTOR 23P TWG-P23P-A1	J3TWA23TG001
CN704	TWG CONNECTOR 23P TWG-P23P-A1	J3TWA23TG001
CN705	242 SERIES CONNECTOR 224202104W1	J322C04TG001
CN706	242 SERIES CONNECTOR 224202106W1	J322C06TG001
CN707	CONNECTOR FMN TOP 13P 13FMN-BTK-A(LF)(SN)	JCFNG13JG019
CN708	CONNECTOR PRINT MES 26FMN-BTK-A(LF)(SN)	JCFNG26JG019
	DIODES	
D31	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D401	ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D402	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D403	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D407	PCB JUMPER D0.6-P5.0	JW5.0T
D408	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D409	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D410	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133

Ref. No.	Description	Part No.
D411	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D412	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D413	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D414	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D415	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D416	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D417	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D418	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D419	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D422	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D423	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D501	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D507	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D509	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D510	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D511	ZENER DIODE MTZJT-7739B	QDTB00MTZJ39
D512	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D513	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D516	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D518	ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D519	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D523	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D524	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D562	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D563	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D564	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D568	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D569	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D570	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D605⚠	DIODE 1N5397-B	NDLZ001N5397
D606⚠	DIODE 1N5397-B	NDLZ001N5397
D607⚠	DIODE 1N5397-B	NDLZ001N5397
D608⚠	DIODE 1N5397-B	NDLZ001N5397
D609	ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D611⚠	ZENER DIODE MTZJT-7722B	QDTB00MTZJ22
D613	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D614	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D616⚠	ZENER DIODE MTZJT-7733B	QDTB00MTZJ33
D624⚠	ZENER DIODE MTZJT-7739B	QDTB00MTZJ39
D702	ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D801	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D802	ZENER DIODE MTZJT-7712B	QDTB00MTZJ12
D901	DIODE SCHOTTKY SB3150BH	NDWZ00SB3150
D902	DIODE FR154	NDLZ000FR154
D903	SCHOTTKY BARRIER DIODE ERA81-004Q	QDLZRA81004Q
D904	ZENER DIODE MTZJT-7724B	QDTB00MTZJ24
D906	SCHOTTKY BARRIER DIODE SB240-B/P	NDQZ000SB240
D907	SCHOTTKY BARRIER DIODE SB240-B/P	NDQZ000SB240
D908	RECTIFIER DIODE 1N4005	NDQZ001N4005
D909	DIODE FR154	NDLZ000FR154
D910	DIODE 1ZC43(Q)	QDLZ001ZC43Q
D911	SCHOTTKY BARRIER DIODE ERC81-004	QDPZERC81004
D912	RECTIFIER DIODE 1N4005	NDQZ001N4005
D913	RECTIFIER DIODE 1N4005	NDQZ001N4005
D914	DIODE FR104-B	NDLZ000FR104
D915	RECTIFIER DIODE 1N4005	NDQZ001N4005
D916	ZENER DIODE MTZJT-7713B	QDTB00MTZJ13
D917	RECTIFIER DIODE 1N4005	NDQZ001N4005
D918	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D919	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D921	RECTIFIER DIODE 1N4005	NDQZ001N4005
D922	ZENER DIODE MTZJT-775.6C	QDTC0MTZJ5R6
D923	RECTIFIER DIODE 1N4005	NDQZ001N4005

Ref. No.	Description	Part No.
D924	ZENER DIODE MTZJT-7736B	QDTB00MTZJ36
D925	ZENER DIODE MTZJT-7724B	QDTB00MTZJ24
D926	ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
D927	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D928	ZENER DIODE MTZJT-7733B	QDTB00MTZJ33
D929	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D930	ZENER DIODE MTZJT-775.6C	QDTC0MTZJ5R6
D932	DIODE FAST RECOVERY FR106-B/P	NDWZ0FR106BP
D933	ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D934	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D935	ZENER DIODE MTZJT-773.9B	QDTB0MTZJ3R9
D939	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D940	ZENER DIODE MTZJT-7710B	QDTB00MTZJ10
D942	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D951	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D952	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D956	ZENER DIODE MTZJT-778.2B	QDTB0MTZJ8R2
D957	ZENER DIODE MTZJT-773.9B	QDTB0MTZJ3R9
D963	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
ICS		
IC31	IC VIF/SIF M61116FP TF0G	QSZBA0SHT034
IC61	IC EEPROM 128K AT24C128BN-SH-T SOIC	NSZBA0TAZ095
IC601⚠	PHOTO COUPLER LTV817MCF	NPECLTV817MF
IC801	IC AN17812A	QSZBA0SMS017
IC851	IC MTS DECORDER AN5832SA-E1V	QSZBA0TMS003
IC852	IC SWITCHING TC4052BF(ELNF)	QSZBA0TTS162
IC853	IC SWITCH TC4053BF(EL N F)	QSZBA0TTS163
IC854	IC SWITCH TC4053BF(EL N F)	QSZBA0TTS163
IC902	IC LD1117V	NSZBA0SSS046
IC904	IC VOLTAGE REGULATOR PQ070XFC1SZF / 4PIN	QSZBA0RSH083
IC905	IC VOLTAGE REGULATOR 5V KIA7805API/P	NSZBA0SJY041
IC907	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
IC908	SHUNT REGULATOR KIA2431AP-AT/P	NSZBA0TJY054
IC909	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
IC910	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
IC911	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
IC912	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
IC913	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
COILS		
L21	PCB JUMPER D0.6-P5.0	JW5.0T
L22	INDUCTOR 150μH-J-26T	LLAXJATTU151
L31	PCB JUMPER D0.6-P5.0	JW5.0T
L32	INDUCTOR 18μH-J-26T	LLAXJATTU180
L401B	POWER INDUCTER RCR1616-471K	LLC471KSF009
L403	CHOKE COIL 22μH-K	LLBD00PKV021
L601⚠	LINE FILTER JLB20102	LLEG0Z0XB006
L701	PCB JUMPER D0.6-P5.0	JW5.0T
L702	INDUCTOR 22μH-J-26T	LLAXJATTU220
L801	INDUCTOR 22μH-J-26T	LLAXJATTU220
TRANSISTORS		
Q401	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q402	CHIP TRANSISTOR KTC3875S-GR-RTK/P	NQ14KTC3875S
Q403	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q404	TRANSISTOR KTA1267-GR-AT/P	NQS1KTA1267P
Q405	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q406	NPN TRANSISTOR POWER 2SC4881F HFE MAX320	QQWZ2SC4881F
Q407	CHIP TRANSISTOR KTC3875S-GR-RTK/P	NQ14KTC3875S
Q408⚠	FET MOS SMD HAT2215R01-EL-E	QF2ZHAT2215R
Q410	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q411	CHIP TRANSISTOR KTA1504S-Y-RTK/P	NQ1YKTA1504S
Q412	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P

Ref. No.	Description	Part No.
Q414	CHIP TRANSISTOR KTC3875S-GR-RTK/P	NQ14KTC3875S
Q501	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q601⚠	FET MOS 2SK3563(Q)	QFWZ2SK3563Q
Q603⚠	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q701	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q703	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q707	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q708	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q709	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q802	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q901	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q902	NPN TRANSISTOR POWER 2SC4881F HFE MAX320	QQWZ2SC4881F
Q904	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q905	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q906	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q907	TRANSISTOR 2SD400(F)	QQUF002SD400
Q908	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q909	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q910	TRANSISTOR KTA1267-GR-AT/P	NQS1KTA1267P
Q911	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q912	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q913	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q914	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q916	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q917	TRANSISTOR KTA1267-GR-AT/P	NQS1KTA1267P
Q918	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q919	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q922	NPN TRANSISTOR POWER 2SC4881F HFE MAX320	QQWZ2SC4881F
Q923	TRANSISTOR KTA1267-GR-AT/P	NQS1KTA1267P
Q924	TRANSISTOR KTA1267-GR-AT/P	NQS1KTA1267P
Q925	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q927	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q928	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q929	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q930	TRANSISTOR KTA1267-GR-AT/P	NQS1KTA1267P
Q934	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q935	NPN TRANSISTOR POWER 2SC4881F HFE MAX320	QQWZ2SC4881F
Q936	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
	RESISTORS	
R17	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R21	CHIP RES. 1/10W J 150k Ω	RRXAJR5Z0154
R23	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R24	CHIP RES. 1/10W J 820k Ω	RRXAJR5Z0824
R25	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R26	PCB JUMPER D0.6-P5.0	JW5.0T
R32	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R38	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R42	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R46	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R48	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R49	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R61	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R62	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R67	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R68	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R72	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R73	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R74	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R75	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R401	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R402	CHIP RES. 1/10W J 27k Ω	RRXAJR5Z0273

Ref. No.	Description	Part No.
R404	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R405	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R406	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R407	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R408	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R409	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R410	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R411	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R412	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R413	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R414	CHIP RES. 1/10W J 47 Ω	RRXAJR5Z0470
R415	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R417	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R418	CHIP RES. 1/10W J 330 Ω	RRXAJR5Z0331
R419	CHIP RES. 1/10W J 330 Ω	RRXAJR5Z0331
R421⚠	METAL OXIDE FILM RES. 3W J 0.33 Ω	RN03R33DP005
R422	CHIP RES. 1/10W J 820k Ω	RRXAJR5Z0824
R423	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R424	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R425	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R426	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R427	CHIP RES. 1/10W J 560k Ω	RRXAJR5Z0564
R428	CHIP RES. 1/10W J 560k Ω	RRXAJR5Z0564
R429	CHIP RES. 1/10W J 820k Ω	RRXAJR5Z0824
R430	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R431	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R432	CHIP RES. 1/10W J 820 Ω	RRXAJR5Z0821
R433	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R435	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R436	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R437	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R438	CHIP RES. 1/10W J 560 Ω	RRXAJR5Z0561
R439	METAL OXIDE FILM RES. 2W J 0.68 Ω	RN02R68DP004
R440	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R441	CHIP RES. 1/10W J 130k Ω	RRXAJR5Z0134
R442	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R443	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R448	CHIP RES. 1/10W J 220k Ω	RRXAJR5Z0224
R450	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R513	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R515	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R516	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R518	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R519	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R520	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R521	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R539	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R601⚠	CEMENT RES. 3W K 1.2 Ω	RW031R2PG007
R602	RES CARBON 1/2W J 3.3M Ω	RCX2335DP006
R603	CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R604	CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R605	CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R607	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R608	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R609	CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R610	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R613⚠	METAL OXIDE FILM RES. 2W J 0.56 Ω	RN02R56DP004
R621	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R623	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R704	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R705	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R706	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R707	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000

Ref. No.	Description	Part No.
R708	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R709	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R710	CARBON RES. 1/4W G 1k Ω	RCX4GATZ0102
R711	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R712	CARBON RES. 1/4W G 1k Ω	RCX4GATZ0102
R713	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R715	PCB JUMPER D0.6-P5.0	JW5.0T
R716	PCB JUMPER D0.6-P5.0	JW5.0T
R718	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R719	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R720	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R721	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R722	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R723	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R724	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R726	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R728	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R729	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R730	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R731	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R732	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R733	CHIP RES. 1/10W J 560 Ω	RRXAJR5Z0561
R734	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R735	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R736	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R737	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R738	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R739	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R740	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R741	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R742	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R743	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R744	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R745	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R756	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R759	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R783	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R786	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R797	CHIP RES. 1/10W J 3.9k Ω	RRXAJR5Z0392
R798	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R799	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R801	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R805	METAL OXIDE FILM RES. 2W J 2.7 Ω	RN022R7DP004
R806	CHIP RES. 1/10W J 8.2k Ω	RRXAJR5Z0822
R807	METAL OXIDE FILM RES. 2W J 2.7 Ω	RN022R7DP004
R808	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R809	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R810	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R811	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R812	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R813	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R814	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R815	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R816	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R817	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R818	CHIP RES. 1/10W J 8.2k Ω	RRXAJR5Z0822
R819	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R820	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R822	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R823	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R824	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R825	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R826	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104

Ref. No.	Description	Part No.
R827	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R828	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R829	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R830	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R831	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R832	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R833	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R834	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R835	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R836	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R837	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R838	PCB JUMPER D0.6-P5.0	JW5.0T
R839	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R840	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R841	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R842	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R843	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R844	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R845	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R846	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R847	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R848	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R849	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R850	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R851	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R852	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R853	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R855	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R856	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R857	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R859	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R860	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R861	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R862	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R863	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R864	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R865	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R866	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R867	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R868	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R871	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R872	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R873	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R874	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R875	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R876	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R880	CHIP RES. 1/10W J 3.9k Ω	RRXAJR5Z0392
R881	CHIP RES. 1/10W J 3.9k Ω	RRXAJR5Z0392
R882	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R883	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R884	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R885	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R886	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R887	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R892	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R893	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R894	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R900	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R901	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R905	RES METAL OXIDE FILM 1W J 0.33 Ω	RN01R33DP003
R906	CARBON RES. 1/4W J 68 Ω	RCX4JATZ0680
R907	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R908	CHIP RES. 1/10W F 3.3k Ω	RRXAFR5H3301

Ref. No.	Description	Part No.
R909	CHIP RES. 1/10W F 10k Ω	RRXAFR5H1002
R910	METAL OXIDE FILM RES. 2W J 0.82 Ω	RN02R82DP004
R911	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R912	CHIP RES. 1/10W F 3.3k Ω	RRXAFR5H3301
R913	CHIP RES. 1/10W F 10k Ω	RRXAFR5H1002
R914	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R915	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R916	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R917	CHIP RES. 1/10W F 820 Ω	RRXAFR5H8200
R918	CHIP RES. 1/10W F 5.6k Ω	RRXAFR5H5601
R920	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R921	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R922	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R923	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R924	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R925	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R926	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R927	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R929	CARBON RES. 1/4W J 1.5 Ω	RCX4JATZ01R5
R930	CARBON RES. 1/4W J 1.8 Ω	RCX4JATZ01R8
R931	CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R932	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R933	CHIP RES. 1/10W F 3.3k Ω	RRXAFR5H3301
R934	CHIP RES. 1/10W F 10k Ω	RRXAFR5H1002
R935	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R936	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R937	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R938	CHIP RES. 1/10W F 220 Ω	RRXAFR5H2200
R939	CHIP RES. 1/10W F 22k Ω	RRXAFR5H2202
R940	CARBON RES. 1/4W J 68 Ω	RCX4JATZ0680
R941	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R942	PCB JUMPER D0.6-P5.0	JW5.0T
R943	CHIP RES. 1/10W F 240 Ω	RRXAFR5H2400
R944	CHIP RES. 1/10W F 1.2k Ω	RRXAFR5H1201
R945	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R946	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R947	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R948	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R949	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R950	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R951	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R952	METAL OXIDE FILM RES. 1W 470 Ω	RN01471DP003
R953	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R954	CARBON RES. 1/4W J 120 Ω	RCX4JATZ0121
R955	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R956	METAL OXIDE FILM RES. 2W J 0.82 Ω	RN02R82DP004
R957	RES METAL OXIDE FILM 1W J 0.33 Ω	RN01R33DP003
R958⚠	CHIP RES. 1/10W F 3.9k Ω	RRXAFR5H3901
R959⚠	CHIP RES. 1/10W F 3.9k Ω	RRXAFR5H3901
R960⚠	CHIP RES. 1/10W F 4.7k Ω	RRXAFR5H4701
R961⚠	CHIP RES. 1/10W F 4.7k Ω	RRXAFR5H4701
R962⚠	CHIP RES. 1/10W F 300 Ω	RRXAFR5H3000
R963⚠	CHIP RES. 1/10W F 300 Ω	RRXAFR5H3000
R964⚠	CHIP RES. 1/10W F 300 Ω	RRXAFR5H3000
R965⚠	CHIP RES. 1/10W F 300 Ω	RRXAFR5H3000
R966	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R967	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R968	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R969	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R970	CARBON RES. 1/4W J 120 Ω	RCX4JATZ0121
R971	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R972	CARBON RES. 1/2W J 4.7 Ω	RCX2JZQZ04R7
R973	CARBON RES. 1/2W J 3.9 Ω	RCX2JZQZ03R9

Ref. No.	Description	Part No.
R974	PCB JUMPER D0.6-P5.0	JW5.0T
R975	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R976	CARBON RES. 1/4W J 6.8 Ω	RCX4JATZ06R8
R977	CARBON RES. 1/4W J 5.6 Ω	RCX4JATZ05R6
R978	CHIP RES. 1/10W F 10k Ω	RRXAFR5H1002
R979	CHIP RES. 1/10W F 3.3k Ω	RRXAFR5H3301
R980	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R981	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R982	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R983	METAL OXIDE FILM RES. 2W J 0.82 Ω	RN02R82DP004
R985	CHIP RES. 1/10W F 330 Ω	RRXAFR5H3300
R986	CHIP RES. 1/10W F 680 Ω	RRXAFR5H6800
R987	CARBON RES. 1/4W J 120 Ω	RCX4JATZ0121
R988	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R989	CHIP RES. 1/10W J 1.2 Ω	RRXAJR5Z01R2
R991	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R992	CHIP RES. 1/10W J 27k Ω	RRXAJR5Z0273
R993	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R994	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R995	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R996	PCB JUMPER D0.6-P5.0	JW5.0T
R997	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R998	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R999	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R1001	METAL OXIDE FILM RES. 2W J 10 Ω	RN02100DP004
R1002	PCB JUMPER D0.6-P5.0	JW5.0T
R1003	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R1004	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1005	CHIP RES. 1/10W F 4.7k Ω	RRXAFR5H4701
R1006	CHIP RES. 1/10W F 4.7k Ω	RRXAFR5H4701
R1007	CHIP RES. 1/10W F 2.2k Ω	RRXAFR5H2201
R1008	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1010	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1015	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1016	CHIP RES. 1/10W J 6.8 Ω	RRXAJR5Z06R8
R1017	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1018	METAL OXIDE FILM RES. 1W J 150 Ω	RN01151DP003
R1019	METAL OXIDE FILM RES. 2W J 10 Ω	RN02100DP004
R1020	METAL OXIDE FILM RES. 2W J 10 Ω	RN02100DP004
R1021	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1022	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R1023	CHIP RES. 1/10W J 3.3 Ω	RRXAJR5Z03R3
R1024	CHIP RES. 1/10W F 5.6k Ω	RRXAFR5H5601
R1025	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1026	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R1028	CHIP RES. 1/10W F 47.0 k Ω	RRXAFR5H4702
R1029⚠	CHIP RES. 1/10W F 300 Ω	RRXAFR5H3000
R1030	CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1051	RES CHIP.(1608) 1/10W J 0.30 Ω	RRXAR30HH007
R1052	RES CHIP.(1608) 1/10W J 0.30 Ω	RRXAR30HH007
R1054	CARBON RES. 1/4W J 120 Ω	RCX4JATZ0121
R1710	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
MISCELLANEOUS		
AC601⚠	AC CORD A0A0280-007	WAC0172LTE04
B10	POW HEAT SINK A7120UH	1EM423993
BC61	PCB JUMPER D0.6-P5.0	JW5.0T
BC62	PCB JUMPER D0.6-P5.0	JW5.0T
BC63	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC65	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC602	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
CF31	CERAMIC FILTER SFSRA4M50CF00-B0	FBB455PMR004
CL801A	WIRE ASSEMBLY SPEAKER 2PIN 2PIN / 110MM	WX1A84N0-006

Ref. No.	Description	Part No.
CL802A	WIRE ASSEMBLY SPEAKER 2PIN 2PIN / 110MM	WX1A84N0-006
F601⚠	FUSE 4.00A/125V	PAGG20CNG402
FH601	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
FH602	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
JK701	JACK SW DIN PCB S 04/DIN-417HA-01	JYEJ040YUQ03
JK702	JACK RCA PCB S AV-4B-70HH	JXRJ010SNJ06
JK703	RCA JACK AV-4B-54H YELLOW	JXRJ010SNJ01
JK704	RCA JACK WHITE AV-4B-58H WHITE	JXRJ010SNJ04
JK705	RCA JACK AV-4A-57H RED	JYRJ010SNJ01
JK706	RCA JACK AV-4B-55H	JXRJ010SNJ05
JK707	RCA JACK AV-4B-56H	JXRJ010SNJ02
JK708	RCA JACK AV-4B-57H	JXRJ010SNJ03
JK709	RCA JACK WHITE AV-4B-58H WHITE	JXRJ010SNJ04
JK710	RCA JACK AV-4A-57H RED	JYRJ010SNJ01
JK801	MINIATURE JACK(PB FREE) CKX-035-318AZ4	JYSL010SNJ01
JS701	PCB JUMPER D0.6-P5.0	JW5.0T
L4	SCREW B-TIGHT D3X8 BIND HEAD+	GBJB3080
SA601⚠	SURGE ABSORBER 470V+-10PER	NVQZ10D471KB
SF11	FILTER CERAMIC B SAFHS45M7VAUM01B05	FBB456LMR006
T401⚠	TRANS INVERTER ETJV26ZE11AC	LTZ3PC0MS001
T601⚠	TRANS POWER 8701	LTT2PC0KT031
TM601	EYELET TYPE D-1	0VM406868
TM602	EYELET TYPE D-1	0VM406868
TU61	TUNER UNIT U4002AF	UTUNATSSP001

FUNCTION CBA

Ref. No.	Description	Part No.
	FUNCTION CBA Consists of the following:	----------
	CAPACITORS	
C1101	CAP CERAMIC (AX) 0.1μF/50V/F/Z	CA1J104TU062
C1102	CAP CERAMIC (AX) 0.1μF/50V/F/Z	CA1J104TU062
	RESISTORS	
R1105	CARBON RES. 1/4W G 150 Ω	RCX4GATZ0151
R1106	CARBON RES. 1/4W G 150 Ω	RCX4GATZ0151
R1107	CARBON RES. 1/4W G 220 Ω	RCX4GATZ0221
R1108	CARBON RES. 1/4W G 270 Ω	RCX4GATZ0271
R1109	CARBON RES. 1/4W G 470 Ω	RCX4GATZ0471
R1110	CARBON RES. 1/4W G 680 Ω	RCX4GATZ0681
R1111	CARBON RES. 1/4W G 150 Ω	RCX4GATZ0151
R1112	CARBON RES. 1/4W G 150 Ω	RCX4GATZ0151
R1113	CARBON RES. 1/4W G 220 Ω	RCX4GATZ0221
R1114	CARBON RES. 1/4W G 270 Ω	RCX4GATZ0271
R1115	CARBON RES. 1/4W G 470 Ω	RCX4GATZ0471
R1116	CARBON RES. 1/4W G 680 Ω	RCX4GATZ0681
	SWITCHES	
SW1101	TACT SWITCH SKQSAB	SST0101AL038
SW1102	TACT SWITCH SKQSAB	SST0101AL038
SW1103	TACT SWITCH SKQSAB	SST0101AL038
SW1104	TACT SWITCH SKQSAB	SST0101AL038
SW1105	TACT SWITCH SKQSAB	SST0101AL038
SW1106	TACT SWITCH SKQSAB	SST0101AL038
SW1107	TACT SWITCH SKQSAB	SST0101AL038
SW1108	TACT SWITCH SKQSAB	SST0101AL038
SW1109	TACT SWITCH SKQSAB	SST0101AL038
SW1110	TACT SWITCH SKQSAB	SST0101AL038
SW1111	TACT SWITCH SKQSAB	SST0101AL038
SW1113	TACT SWITCH SKQSAB	SST0101AL038
	MISCELLANEOUS	
CL1162	WIRE ASSEMBLY SW 4PIN 4PIN/92MM	WX1A84N0-004

IR SENSOR CBA

Ref. No.	Description	Part No.
	IR SENSOR CBA Consists of the following:	----------
	CAPACITOR	
C1161	CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
	DIODES	
D1163	LED(YELLOW) 204YD/E	NPQZ00204YDE
D1164	LED DUAL RED AND GREEN LTL-1BEHJ	NPQZLTL1BEHJ
D1165	TWO COLOR LIGHTING LED LA MP SPR-39MVWF	QPQZSPR39MVW
	TRANSISTORS	
Q1161	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1162	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1163	TRANSISTOR KTA1267-GR-AT/P	NQS1KTA1267P
	RESISTORS	
R1161	CARBON RES. 1/4W J 120 Ω	RCX4JATZ0121
R1162	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1163	CHIP RES. 1/10W J 150 Ω	RRXAJR5Z0151
R1164	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1165	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R1166	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1167	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
	MISCELLANEOUS	
CL1161	WIRE ASSEMBLY SENSOR 6PIN 6PIN/85MM	WX1A84N0-003
RS1161	PHOTO LINK MODULE KSM-712TH2E	USESJRSKK044

JUNCTION CBA

Ref. No.	Description	Part No.
	JUNCTION CBA Consists of the following:	----------
	CONNECTORS	
CN1162	242 SERIES CONNECTOR TUC-P06X-B1 WHT ST	JCTUB06TG002
CN1163	242 SERIES CONNECTOR TUC-P04X-B1 WHT ST	JCTUB04TG002

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